

**NATIONAL INSTITUTE OF TECHNOLOGY,  
WARANGAL – 506 004**



**ENGINEERING & MAINTENANCE UNIT**

**TENDER SCHEDULE**

**Notification for Expression of Interest**

**No.NITW/E&MU/2017-18/439 Dt: 12-01-2018.**

**Name of work :** Construction of Pre Engineered Building on  
Turnkey mode above the existing Ladies  
Hostel dining hall in NITW Campus(Second call )

**Issued to :** .....

.....

**CONTRACTOR**

**PROJECT ENGINEER**

**FORWARDING SLIP FOR TENDER SCHEDULE**

No.NITW/E&amp;MU/2017-18/439 Dt: 12-01-2018.

Issued to: .....Contractor

.....Class: .....

Name of work:- Construction of Pre Engineered Building on  
Turnkey mode above the existing Ladies  
Hostel dining hall in NITW Campus(Second call)

Estimate contract value: Rs. ....

Earnest money deposit: 1) Along with Tender 1% Rs.....

2) At the time of  
agreement 1 ½ % Rs.....**PROJECT ENGINEER**

## FOR THE OFFICE USE ONLY:

- 1) *Date of opening of tender* : .....
- 2) *Whether received in proper form* ; .....
- 3) *Whether the E.M.D. paid* : .....
- 4) *If paid : D.D.No.....Date: .....*  
*Name of the bank and branch.....*  
*.....Amount paid Rs.....*
- 5) *No. of attested corrections* .....
- 6) *No. of unattested corrections* .....
- 7) *Opened by / Signature*  
( *Name, Designation & Stamp* ):

**CONTRACTOR****PROJECT ENGINEER**

**OFFICE OF THE PROJECT ENGINEER  
NATIONAL INSTITUTE OF TECHNOLOGY, WARANGAL-506 004**

Note to Tenderers: .

Name of work: Construction of Pre Engineered Building on Turnkey mode above the existing Ladies Hostel dining hall in NITW Campus (Second call )

- 1.01. The tenderers should affix their signatures at the bottom of every page of schedule and drawings.
  
- 1.02. The schedules with its enclosures must be returned intact.
  
- 1.03. The particulars required in tender form are to be invariably filled in with special reference to the following:
  - a) Total lumpsum amount of tender
  - b) Details of Registration of the firm or contractor, giving reference to authority.  
Attested copy of registration is to be attached.
  - c) Details of EMD paid.
  - d) Professional qualifications of the Contractor/Agency.
  - e) The name of the technical agent or agents proposed to be appointed on the work with qualifications.
  
- 1.04. Individual deposits should be furnished for each tender  
  
Total no. of Sheets in this schedule: .....  
  
Total no. of drawings in this schedule: .....

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### TENDER NOTICE

1.1 Sealed Tenders will be received by the Director, National Institute of Technology, Warangal or his authorized representative at Project Engineer's Office during working hours on .....200 up to 15.00 hours and the tenders will be opened by the Director, National Institute of Technology, Warangal or his authorized representative at his office at 16.00 hours on..... for the work of **Construction of Pre Engineered Building on Turnkey mode above the existing Ladies Hostel dining hall in NITW Campus**

.....

.....

1.2 The tender shall be in the prescribed form obtained from the Project Engineer's office, National Institute of Technology, Warangal on.....200 . The tender with all its 'within papers' including schedule A conditions of contractor etc., shall be duly signed by the Project Engineer of National Institute of Technology, Warangal before they are issued to or obtained by any intending tenderer so as to ensure authenticity of the said papers when resubmitted with his signatures by a tenderer.

Tenders will be received in two parts in two different sealed covers viz., cover 'A' and cover 'B'. The cover 'A' super scribed as "Technical bid" and bears the name of the contractor on bottom left corner shall contain the qualification data such as;

- i) EMD in shape of crossed demand draft.
- ii) Annual turnover and works executed etc., by the tenderer
- iii) Minimum requirements of physical quantities as prescribed in CTN;
- iv) Similar works executed in any one year of the value of Rs.....
- v) Availability (either owned or leased) of key and critical equipment;
- vi) Liquid assets/credit;
- vii) Availability of key technical persons with adequate experience;
- viii) Registration of contract;

Cover 'B' super scribed as "Price bid" shall contain the financial bid for the work in question.

1.2.1 To 1.2.4 separate sheets Appended as Qualification requirements as TB No.1 to TB No.6

1.2 The Tenderers or their agents are expected to be present at the time of opening of the tenders. The tender receiving officer while opening each tender prepare a statement of the attested and unattested corrections therein and hand it over to the tenderer concerned and initial all such corrections in the presence of the tenderer. If any of the tenderers or his agent find it inconvenient to be present at the time of opening tenders, the tender receiving officer will on opening the tender of the absentee tenderer make out a statement of unattested corrections and communicate it to him. The absentee tenderer shall then accept the statement of the corrections and decision made without any question whatsoever.

1.3 It is to be specially noted by the tenderer that a registered contractor who does not file any tender in a whole year shall be reverted to the next lower category, if he defaults similarly for two consecutive years his registration shall be cancelled.

1.4 **The tenderers shall furnish declaration that:**

- a) They have not been blacklisted in any department in A.P. due to the failure to return the tender schedules within 7 days after receiving them, when they did not intend to tender on earlier occasions.
- b) That they have not been demoted to lower category in any department in A.P. for not filing the tenders after buying the tender schedules in a whole year and their registration have not been cancelled for a similar default in two consecutive years.
- c) That they will agree to get disqualified themselves for any wrong declaration in respect of the above and to summarily reject their tenders.

2.1 Tenders must be submitted in sealed envelopes either in person or through an agent or by post and should be addressed to the Director, National Institute of Technology, Warangal. In case of submission of tender by post the risk and responsibility for either loss or delays in transit of the same is to be borne by the contractor and tender opening authority will not consider any tender received after the expiry of the time and date fixed for receipt of tenders.

2.2 If the tender is made by an individual, it shall be signed with his full name and his address shall be given. If it is made by a firm, it shall be signed with the co-partnership name by a member of the firm, who shall also sign his own name, and the name and address of each member of the firm shall be given. If the tender is made by a corporation it shall be signed by a duly authorized officer who shall produce with his tender satisfactory evidence of his authorization. Such tendering corporation may be required before the contract is executed, to furnish evidence of its corporate existence.

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2.3 a) Each tenderer must also submit a latest certificate of income tax verification from the appropriate income tax authorities in the form prescribed therefor.

b) In case of proprietary partnership firm it will be necessary to furnish the certificate mentioned above for the proprietor and for each of the partners as the case may be.

## 2. PAYMENT OF E.M.D:

3.1 Tenderers should pay E.M.D. at 1% of estimated contract value in the shape of crossed D.D. along with tender.

3.2 The tenderers should pay the balance E.M.D. @ 1 ½% of estimated contract value at the time of signing the agreement in the shape of crossed D.D.

3.3 The retention amount from the running bills will be deducted at the rate of 7.5% as usual.

3.4 The earnest money deposit will be refunded to the unsuccessful tenderers on application after intimation is sent of rejection of their tenders or at the expiration of 3 months from the date of receipt of tenders whichever is earlier. This refund will be authorized by Director, National Institute of Technology, Warangal by suitable endorsement on the demand draft or issue of cheque on State Bank of Hyderabad, N.I.T., Branch in favour of the unsuccessful tenderer.

3.5 The earnest money will be retained in the case of the successful tenderer and will not carry any interest. It will be dealt with as provided in the tender.

3.6 The tenders received will be decided within a period of three months after the expiry of the last date prescribed for the receipt of the tenders and the decision regarding the disposal of the tenders will be informed at any time within the said period. The tenders shall remain valid for a period of three months. In case if the Director, National Institute of Technology, Warangal seeks further extension of validity from contractor and in case the validity is not extended, his/her tender will not be considered and the EMD will be returned.

3.7 During the above mentioned period no plea by the tender for any sort of modification of the tender based upon or arising out of any alleged misunderstanding or misconception or mistake or for any reason will be entertained.

3.8 All the earnest money deposited by the tenderer will be forfeited to the National Institute of Technology, Warangal if the authority competent to accept the tender so desires in the event of such tenderer withdrawing his tender within the period of three months as specified above.

4. In consideration of the Director, National Institute of Technology, Warangal agreeing to investigate and to take into account each tender and in consideration of the work thereby involved, all earnest money deposited by the tenderer will be forfeited to the National Institute of Technology, Warangal in the event of such tenderer either modifying or withdrawing his tender at his instance within the said validity period of three months.

5.1 When a tender is to be accepted the tenderer whose tender is under consideration shall attend the office of the Director, National Institute of Technology, Warangal on the date fixed by written intimation to him. He shall forthwith upon being given by the Director/Project Engineer of acceptance of his tender make payment of balance EMD and sign an agreement in the prescribed form for the due fulfillment of this contract. The Earnest Money Deposit and the amount withheld according to condition 3-1 of schedule – E shall be retained as security for the due fulfillment of this contract.

If a cash security deposit is made by the contractor he shall follow the procedure laid down in the preceding paras, for payment of EMD and such deposit will not bear interest. Failure to attend the office of the Director on the date fixed in the written intimation from such office or to enter into the required agreement shall entail forfeiture of Earnest Money. The written agreement to be entered into between the contractor and the Director shall be the foundation of the rights and obligations of both the parties and the contract shall not be deemed to be complete until the agreement has first been signed by the contractor and then by the Director to enter into contract on behalf of the National Institute of Technology, Warangal.

5.2 The successful tenderer has to sign an agreement within a period of 15 days from the date of receipt of communication of acceptance of his tender. On failure to do so his tender will be cancelled duly forfeiting the EMD paid by him without issuing any further notice.

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- 6.1 The tenderer shall examine closely the A.P.S.S. and also the standard preliminary specifications contained therein and sign the Project Engineer's Office copy of the APSS and its addenda volume in token of such study before submitting his overall tender percentage which shall be for finished work in-situ. He shall also carefully study the drawings and additional specifications and all the documents which form part of the agreement to be entered into by the successful tenderer. The APSS and other documents connected with contract such as specifications plans descriptive specification sheet regarding materials etc., can be seen at any time between 9 am to 5 pm on all working days in the office of the Project Engineer, National Institute of Technology, Warangal.
- 6.2 A copy of the set of the contract documents can also be had on payment of  
Rs.....(Rupees.....  
.....) inclusive of sales tax for each set.
- 7.1 The tenderers attention is directed to requirements for materials under the clause "materials and workmanship" in the preliminary specifications. Materials conforming to the Indian standards specifications shall be used on the work and the tenderers shall quote his rates accordingly.
- 7.2 The tenderer has to do his own testing of materials and satisfy himself that they conform to the specifications of respective ISI codes before tendering.
- 7.3 The contractor shall himself procure the required construction materials of approved quality including the earth for formation of embankment and water from quarries / sources of his choice. All such quarries/sources of materials required for the work shall be got approved by the Project Engineer in writing well before their use on the work.
- 7.4 The contractor shall himself procure the steel, cement, bitumen, blasting materials and such other materials required for the work well in advance. The contractor has to bear the cost of materials conveyance and storage charges etc. The National Institute of Technology, Warangal will not take any responsibility for fluctuations in market in cost of the materials, transportation and loss of materials etc.
8. **Inspection of site and quarries by the tenderer:** Every tenderer is expected, before quoting his overall tender percentage, to inspect the site of proposed work. He should also inspect the quarries and satisfy himself about the quality, quantity and availability of materials. The best class of materials to be obtained from quarries, or other sources shall be used on the work. In every case the materials must comply with the relevant standard specifications. Samples of materials as called for in the standard specifications or in the tender notice or as required by the Project Engineer, in any case, shall be submitted for the Project Engineer's approval before the supply to site of work is begun. The contractor, after examination of the source of materials shall state clearly in his tender wherefrom he intends to obtain materials, subject to the approval of the Project Engineer.
- 9.1 The Tenderer's particular attention is drawn to the sections and clauses in the standard specification dealing with.
1. Test, Inspection and rejection of defective materials and work.
  2. Carriage.
  3. Construction plan.
  4. Water and lighting.
  5. Clearing up during the progress and for delivery.
  6. Accidents.
  7. Delays and
  8. Particulars of payments.
- The Contractor should closely peruse all the specification clauses which govern the overall tender percentage he is tendering.
- 9.2 The defect liability period of contractor shall be 24 ( twenty four ) months.
10. A schedule of quantities and their costs, made in the estimate cost of work accompanies the tender schedule. It shall be definitely understood that the National Institute of Technology, Warangal does not accept any responsibility for the correctness or completeness of this schedule and it is liable to alterations by omissions, deductions, or additions at the discretion of the Director/Project Engineer or as set forth in the conditions of the contract. The tenderer will however base his lumpsum tender on this schedule of quantities. He should quote his overall tender percentage. The overall percentage should be written in words and figures. The tenderer should also indicate lumpsum amount for which he will undertake to do the whole work subject to conditions of the contract. Such lumpsum agreeing with the total amount of schedule i.e. Estimated cost of work plus overall tender percentage operated on estimated contract value indicated in financial bid accompanying the lumpsum tender and shall be written legibly and free from erasers, overwriting or corrections of figures. Corrections where unavoidable should be made by crossing out, initialing dating and rewriting.

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- 11.1 **Discrepancy in Bid quotation:** a) In case of any discrepancy between the overall tender percentage quoted in words and figures the rates quoted in words shall prevail. In case contractor quoted percentage only in words and does not quote in figures or vice versa for work, such tender shall be treated as incomplete and rejected.
- 11.2 The tenders not submitted in proper form or in due time will be rejected. Rates of lumpsum amount for item not called for shall not be included in the tender. No alteration which is made by the tenderer in the contract form, the conditions of the contract, the drawings, specifications or statements / formats or quantities accompanying the same will be rejected : and, if any such alterations are made, the tender will be void.
- 12.1 The tender schedules supplied to tenders contain not only the quantities but also the rates worked out by the National Institute of Technology, Warangal and the amount for each item and total value of the contract. The tenderer should indicate his willingness to do the work either at the estimated value or at a percentage in excess or less over the estimated value of the work. The tenderer should work out his own rates without reference being made to the department schedule of rates or to the departmental estimated rates and quote only his overall tender percentage with which he intends to execute the work.
- 12.2 A tenderer submitting a quotation which the tender accepting authority considers excessive and or indicative of insufficient knowledge of current prices or definite attempt to profiteering will render himself liable to be debarred permanently from tendering or for such period as the Director may decide. The tenderers overall percentage should be based on the controlled prices for the materials, if any, fixed by the Government or the reasonable prices permissible for the tenderer to charge a private purchaser under the provisions of clause-6 of the hoarding and profiteering prevention ordinance of 1943 as amended from time to time and on similar principle in regard to labour supervision in the construction.
- 12.3 For tenders up to 25% less than the estimated cost of work, no additional security deposit is required. But for tenders less by more than 25% of estimated cost of work, a bank guarantee or demand draft for the difference between the tendered amount and 75% of the estimated value should be paid by the successful tenderer at the time of concluding agreement as an additional security to fulfill the contract. The Bank guarantee for additional security deposit should be valid till completion of work in all respects.
- 12.4 Tenders with an excess of 10% and above the estimated contract value shall be summarily rejected. Once a tenderer by a tender schedule he shall not be permitted to return the schedule. If he does not tender for the work his EMD shall be forfeited ( cash or bank guarantee or both )

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## CONDITIONS OF CONTRACT

### *INTERPRETATION:*

In construing these conditions, the specifications, the priced schedule of quantities, tender and agreement, the following words shall have the meanings herein assigned to them except where the subject or context otherwise requires:

“Employer” shall mean Secretary Board of Governors, National Institute of Technology, Warangal and his authorized representatives or successors-in-office.

“Project Engineer” shall mean the person approved and appointed by the Employer and acting under the orders of the Employer to superintend the work. In the within papers of the Articles of Agreement, as also APDSS, Standard Preliminary Specifications and the Addenda volume thereto, wherever the word “Executive Engineer”, occur, the same shall be read and understood as “Project Engineer” specified herein.

“Contractor” shall mean and be deemed to refer to the particular person, firm or corporation with whom an agreement has been made by the Employer or his authorized representatives as the case may 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 under prior written intimation to the employer.

“Site” shall mean the site of the contract works as shown on the site plan attached hereto including any building and erections thereon and any other land adjoining thereto (inclusively) allotted by the Employer for the contractor’s use.

“This contract” shall mean the articles of agreement, these conditions, all schedules including the schedules of quantities and prices the drawings the specifications, the Appendix and any other special conditions, tender and all and any other documents annexed to the Articles of Agreement.

“Act of Insolvency” shall mean any act of insolvency as defined by the provisional Insolvency Act, and any amending Statute.

“Notice in writing” or written notice shall mean a notice in written, typed or printed characters sent (unless delivered personally or otherwise and proved to have been received) by registered office of the addressee and shall be deemed to have received by him when, in the ordinary course of post, it would have been delivered.

Words referring to persons include firms and corporations, words referring to the singular number, shall also include the plural number and vice versa, where the context so requires.

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GURANTEE TO BE EXECUTED BY CONTRACTORS FOR REMOVAL OF DEFECTS AFTER COMPLETION IN RESPECT OF WATER PROOFING WORKS

This agreement made this ..... day of ..... Two thousand and.....between.....s on of ..... (herein after called the Guarantor on the one part and the Director, National Institute of Technology, Warangal on the other part.

Where as this agreement is supplementary to contract herein after called the contract) dated ..... and made between the GUARANTOR OF THE ONE part and the Director, N.I.T, Warangal on the other part. Where by the contractor interlaid, under took to render the buildings and structures in the said contract recited completely water and leak proof.

AND WHERE AS THE GUARANTOR agreed to give a guarantee to the effect that the said structures will remain water and leak proof FOR FIVE YEARS from the date of giving the water proofing treatment.

NOW THE GUARANTOR hereby guarantees that water proofing treatment given by him will render the structures completely water proof and the minimum life of such water proofing treatment shall be FIVE YEARS to be reckoned from the date after the Maintenance period prescribed in the contract:

Provided that the guarantor will not be responsible for leakage caused by earthquake or structural defects or misuse of roof or alteration and for such purpose:

Misuse of roof shall mean any operation which will damage roofing treatment, like chopping of fire wood things of the nature which might cause damage to the roof.

Alteration shall mean construction of an additional storey or a part of the roof or construction adjoining to existing roof whereby roofing treatment removed in parts.

The decision of the Project Engineer with regard to cause of leakage shall be final.

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

That if the Guarantor fails to execute the water proofing or commits breach there-under then the Guarantor will indemnify the Director and his successors against all losses, damage expense or other-wise which may be incurred by him by reason by any default on the part of the Guarantor in performance, observance of this supplementary agreement. As to the loss and / or damage and / or cost incurred by the Institute decision of the Project Engineer will be final and binding on the parties.

IN WITNESS WHERE OF THESE PRESENTS HAVE BEEN EXECUTED between the obligator ..... and by ..... and on behalf of the Director, N.I.T., Warangal on the day month and year first above written.

SIGNED, Sealed and Delivered by (OBLIGATOR) in the presence of:

- 1.
- 2.

Signed for and on behalf of the Director, N.I.T., Warangal by ..... in the presence.

- 1.
- 2.

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13 **TIME FOR COMPLETION:**

- 13.1 a) The total period of completion is .....(.....) months from the date of entering with agreement including rainy season. The work should be programmed such as to achieve the following rate of progress.  
 b) The attention of the tenderer is directed to the contract requirement at the time of beginning of the work, the rate of progress and the dates for the whole work and its several parts.

*RATE OF PROGRESS:*

Percentage of work to be completed based on the contract lumpsum amount within a period of .....(.....) months is as follows:

<u>Period</u>	<u>Rate of progress</u>
months	% of the Contract value
months	% of the Contract value
months	% of the Contract value

- 13.2 The contractor shall commence the works on site within the period specified under condition 13.1 above after the receipt by him of a written order to this effect from the Project Engineer and shall proceed with the same with due expedition and without delay, except as may be expressly sanctioned or ordered by the Project Engineer, or be wholly beyond the contractor's control.

- 13.3 Save in so far as the contract may prescribe, the extent of portions of the site of which the contractor is to be given possession from time to time and the order in which such portions shall be made available to him and, subject to any requirement in the contract as to the order in which the works shall be executed, the Project Engineer will give to the contractor possession of so much of the site as may be required to enable the contractor to commence and proceed with the execution of the works in accordance with the programme referred to in clause '1' of Schedule 'E' if any, and otherwise in accordance with such reasonable proposals of the contractor as he shall, by written notice to the Project Engineer; make and will, from time to time as the works proceed, give to the contractor possession of such further portions of the site as may be required to enable the contractor to proceed with the execution of the works with due dispatch in accordance with the said programme or proposals as the case may be; if the contractor suffers delay or incurs cost from failure on the part of the Project Engineer to give possession in accordance with the terms of this clause, the Project Engineer shall grant an extension of time for the completion of work.

- 13.4 The contractor shall bear all costs and charges for special or temporary way leases required by him in connection with access to the site. The contractor shall also provide at his own cost any additional accommodation outside the site required by him for the purposes of the work.

- 13.5 Subject to any requirement in the contract as to completion of any section of the works before completion of the whole of the works shall be completed in accordance with provisions of clause no 5 of Schedule 'E' within the time stated in the contract calculated from the last day of the period named in the statement to the tender as that within which the works are to be commenced or such extended time as may be allowed.

- 13.6 Delays and extension of time: No claim for compensation on account of delays or hindrance to the work from any cause whatever shall lie, except as hereafter defined. Reasonable extension of time will be allowed by the Director or by the officer competent to sanction the extension, for unavoidable delays, such as may result from causes, which in the opinion of the Project Engineer, are undoubtedly beyond the control of the contractor. The Project Engineer shall assess the period of delay or hindrance caused by any written instructions issued by him at twenty five percent in excess of the actual working period so lost.

In the event of the Project Engineer failing to issue necessary instructions and thereby causing delay and hindrance to the contractor, the latter shall have the right to claim an assessment of such delay by the Director whose decision will be final and binding. The contractor shall lodge in writing with the Project Engineer a statement of claim for any delay or hindrance referred to above, within fourteen days from its commencement, otherwise no extension of time will be allowed. Whenever authorized alterations or additions made during the progress of the work are of such a nature in the opinion of the Project Engineer as to justify an extension of time in consequence thereof, such extension will be granted in writing by the Director or other competent authority when ordering such alterations or additions.

13.7.1 **LIQUIDATED DAMAGES:**

If for any reason, which does not entitle the contractor to an extension of time, the rate of progress of works, or any section is at any time, in the opinion of the Project Engineer too slow to ensure, completion by the prescribed time or extended time for completion Project Engineer shall so notify the contractor in writing and the contractor shall there upon take such steps as are necessary and the Project Engineer may approve to expedite progress so as to complete such section by the prescribed time or extended time. The contractor shall not be entitled to any additional payment for taking such steps.

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If as a result of any notice given by the Project Engineer under this clause the contractor shall seek the Director's permission to do any work at night or Sundays, if locally recognized as days of rest, or their locally recognized equivalent, such permission shall not be unreasonably refused.

- 13.7.2 If the contractor fails to complete whole of the works or any part there of or section of the works within the stipulated periods including any bonafide extensions allowed by the competent authority without levying liquidated damages, the Project Engineer may without prejudice to any other method of recovery will deduct one twentieth of one percent of contract value per calendar day or part of the day for the period of delay subject to a maximum of 10% of the contract value not as a penalty from any moneys in his hands due or which may become due to the contractor. The payment or deduction of such damages shall not relieve the contractor from his obligation to complete the works, or from any other of his obligations and liabilities under the contract.
- 13.7.3 The subletting of the work is strictly prohibited, unless it is permitted in the tender and in the event it is found that any portion of the work is sublet, action will be taken against the contractor by debarring him from participating by the Director.
- 14 No part of the contract shall be sublet nor shall transfer be made by power of attorney authorizing others to receive payment on contractor's behalf without written permission of the Director.
- 15 If further necessary information is required, the Project Engineer will furnish such information but it must be clearly understood that tenders must be received in order and according to instructions.
- 16 The Director, National Institute of Technology, Warangal reserves the right to reject any or all the tenders without assigning any reasons therefor.
- 17 Preference in the selection from among the tenderers will be given, other things being equal, to those who are themselves professionally qualified or who undertake to employ qualified men at their cost to look after the work and to those who in the opinion of the tender accepting authority posses the required tools plants and machinery required for the completion of work in time to his end. The tenderer must furnish carefully and accordingly the list of equipment specially concrete mixes, vibrators, tippers, tractors, tankers and compressors etc., available with them for executing the work in the schedule given in additional information to be furnished by the contractor. The tenderer should therefore state in clear terms whether they are professionally qualified or whether they undertake to employ technical staff and if so give the professional qualifications of the staff to be employed. In case the selected tenderer is one who has undertaken to employ technical staff under him, he should be that one of the staff is always at site of work during working hours personally checking all times and paying extra attention to such work as may demand special attention eg reinforced concrete work etc.
- 18.1 The contractor registered under Class II/ III/ IV/ V and as per G.O.Ms.No.521 Dt. 10-12-1984/ G.O.Ms.No.178 Dt. 27-09-1997/ G.O.No.132 Dt.11-8-1998 are only eligible to tender.
- 18.2 The contractor shall keep identification cards issued by the registering authority at all times, while at the site of work and at offices and produce the identity cards as and when asked for.
- 19.1 A retired officer of the Government is disqualified from tendering for any work for which Government fund are used for a period of two years from the date of retirement without the prior permission of the Government. The contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of the Government as aforesaid before submission of the tender or engagement in the contractor's service.
- 19.2 Contractor shall not be eligible to tender for works in the National Institute of Technology, Warangal where any of his near relatives are employed in the rank of Assistant Engineer or Asst. Executive Engineers and above on the engineering side and Assistant Registrar and above on the administrative side. The contractor shall intimate the names of persons who are working with him in any capacity or are subsequently employed. He shall also furnish a list of Non-Gazetted employees related to him. Failure to furnish such information tenderer is liable to be removed from the list of approved contractors and his contract liable for cancellation.

**NOTE: NEAR RELATIVES INCLUDES**

1. Sons, Step sons, daughters, and Step daughter.
2. Son-in-law, and daughter-in-law.
3. Brother-in-law and sister-in-law.
4. Brothers and Sisters.
5. Father and Mother.
6. Wife/husband.
7. Father-in-law and Mother-in-law.
8. Nephews, nieces, uncle and aunties.
9. Cousins and
10. Any person residing with the contractor.

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- 19.3 The contract will be cancelled if either the contractor himself or any of his employees is found to be gazetted officer who retired from service and had not obtained permission from the Government for accepting the contractor's employment within a period of 2 years from the date of his retirement.

**20. TECHNICAL AGENTS:**

The contractor shall employ the following technical staff during execution of work, unless he himself is technically qualified person.

1. One Graduate Engineer and One Diploma Holder for works costing more than Rs. 15.00 lakhs.
2. One Graduate Engineer or two Diploma Holders for works costing between Rs. 5.00 lakhs and Rs. 15.00 lakhs.
3. One Diploma holder for works costing between Rs. 1.00 lakhs and Rs. 5.00 lakhs.
4. One I.T.I. candidate for works costing between Rs. 50,000 and Rs. 1.00 lakhs.
5. For works costing less than Rs. 50,000 no technical staff need by employed by the contractor.

- 20.1 Failure to employ the required technical staff by the contractor, would entail the following amounts of recoveries from the contractors.

1. Rs. ----- per mensem for work costing Rs. 15.00 lakhs and above.
2. Rs. -----per mensem for works costing above 5.00 lakhs and upto Rs.15.00lakhs.
3. Rs. ----- per mensem for works costing above 1.00 lakhs and upto 5.00 lakhs.
4. Rs. ----- per mensem for works costing Rs. 50,000 and upto Rs. 1.00 lakhs.

**NOTE:**

1. The Technical staff should be on full time and available at site whenever required by Engineer in charge to take instructions.
2. The names of the technical staff to be employed by the contractor should be furnished in the statement enclosed separately.
3. In case the contractor is already having more than one work on hand and if he is himself qualified Engineer and has undertaken more than one work at the same time he should employ separate technical person on each work.
4. If the contractor fails to employ technical subordinate, the work will be suspended or the Institute will engage a technical subordinate and recover the cost thereof, from the contractor. In cases where the Institute has not engaged a technical subordinate a fixed sum will be recovered from the tenderer. This sum will be fixed by the Project Engineer. The decision of Project Engineer will be final.

**21. SETTLEMENT OF DISPUTES:**

- 21.1. If any dispute or difference of any kind whatsoever shall arise between the National Institute of Technology, Warangal and the Contractor in connection with, or arising out of the Contract, of the execution of the works whether during the progress of the works or after their completion and whether before or after the termination, abandonment or breach of the Contract, the decision of the Director, National Institute of Technology, Warangal shall be final and binding on both parties.
22. In case the work is ordered to be taken up before the acceptance of L.S. Agreement, a K-2 agreement will be provisionally entered into and the same will stand superseded when L.S. contract is subsequently signed and accepted. All the work done under such K2 contract will then be treated as part of the L.S. contract and acted on accordingly. If the contractor fails to conclude the L.S. agreement within 15 days from the date of receipt of the notice from the Director, it will entail forfeiture of the earnest money and the cost of the work done. Further the contractor is liable to reimburse the extra cost incurred if any by National Institute of Technology in completing the balance work.

**CONTRACTOR**

**PROJECT ENGINEER**

**ADDITIONAL CONDITIONS TO THE TENDER NOTICE**

- 23.1 The contractor should furnish the address in the tender to which communication relating to the contract may be sent and also authorize a person to be available at work spot during his absence. Any change in the incumbency of the authorized agent shall be communicated in writing by the contractor to the Project Engineer and their acknowledgement obtained on his copy of the communication.
- 23.2 It is to be expressly and clearly understood that contractor shall make his own arrangements to equip himself with all machinery and special tools and plant required for the speedy and proper execution of the work and the Institute does not undertake any responsibility towards their supply.
- 23.3 The tenderer should select quarries of his own choice as well as sources of water and quote the rate including quarrying, conveyance and all other charges.
- 23.4 The work will have to be executed as per the IS specifications, standard specification of APSS and special specification attached herewith or as directed by the Project Engineer with reference to the working drawings.
- 23.5 Rates stated in schedule "A" shall be through rates for finished work in-situ and inclusive of all incidental and contingent charges. All taxes such as sales tax, seigniorage, royalties, etc., in respect of materials to be used on the work must be borne by the contractor. The contractor is advised to analyze the rates workable to him reckoning all the pertinent parameters and quote overall tender percentage over the estimated cost of work.
- 23.6 Vernacular signature should be translated into English.
- 23.7 The Institute accepts no responsibility for any loss damage or hindrance caused to the progress of work or the work itself consequent on the failure of diversion and other protective works whether it be due to rains floods or other causes. The quoted rate must be inclusive of all the above charges.
- 23.8 Excavation will be paid for with vertical slopes indicated in the drawings as far as foundations are concerned and will be paid only once during execution as per plans and section. If the contractor finds it convenient to make out the excavation at slopes other than those shown in the plan to avoid shoring, in any case, it shall be done at his cost and it shall be his responsibility to make the excavation safe, at all stages of work.
- 23.9 Rehandling of excavated soil due to injudicious selections of the place of dumping shall not be paid for.
- 23.10.1 The contractor should use the excavated useful soil and stone obtained from excavation for construction purpose.
- 23.10.2 The responsibility for arranging the land for borrow area and for disposal of spoil, rests with the contractor and no separate payment will be made for the procurement or otherwise and contractor quoted rates will be inclusive of the land cost.
- 23.11 The special attention of the tenderer is drawn to the conditions in the tender notice wherein reference has been made to the Andhra Pradesh Standard Specifications and the Standard Preliminary Specifications contained therein. These preliminary specifications shall apply to the agreement to be entered into between the contractor and Director, National Institute of Technology, Warangal and shall form an inseparable condition of the contract along with the additional conditions of contract, special specifications, drawings agreement, schedules etc. All these documents taken together shall be deemed to form one contract and shall be complementary to one another.
- 23.12 During the currency of the contract deduction of income tax at 2.24 % or whatever the rate fixed by the Govt. of India shall be made from the gross value of each bill of the contract, the contract value of which is in excess of Rs. 20,000/-. For deduction of tax at rates lower than 2.24 % procedure stipulated under section 194-c(4) of Income Tax Act 1961 shall be followed.
- 23.13 Income Tax clearance certificate should be furnished before the payment of final bill, where value of contract is over Rs. 20,000/-.
- 23.14 Seigniorage charges: Seigniorage charges will be recovered from the work bills of the contractor, based on the theoretical requirements of materials at the rates specified at page .....in Schedule 'D'.
- 23.15 As per contract labour (Regulation and Abolition Act 1970) the contractor has to furnish the license obtained from the Licensing officer of the Labour Department along with the tender or at the time of Agreement.
- 23.16 Sales Tax during the currency of the contract deduction towards Andhra Pradesh Sales Act under section 5H of APGST Act 57 according to which tax at 4% has to be deducted at source while making payments to the contractor.
- 23.17 As per Act 22 of 1995 the connected rules 17 (1) has been amended and substituted as follows:
- (1) The Tax to be deducted at source under section 5H shall be at the rates prescribed below:
- |     |                                                                                                   |                        |
|-----|---------------------------------------------------------------------------------------------------|------------------------|
| i)  | All the categories of contracts not falling sub clause                                            |                        |
| ii) | mentioned below                                                                                   | 4 % of Gross turn over |
| ii) | Exclusive Civil contracts Namely contracts for laying repairing of roads and lining and repairing | 2 % of Gross turn over |
- Whenever there is any change of rate in Sales Tax the same will be recovered.

**CONTRACTOR****PROJECT ENGINEER**

**TENDER**

To  
**The Director,**  
 National Institute of Technology,  
Warangal - 4.

Sir,

I / We do hereby tender and if this tender be accepted undertake to execute the following work viz.,  
**Construction of Pre Engineered Building on Turnkey mode above the  
 existing Ladies Hostel dining hall in NITW Campus(Second call )**

as shown in the drawings and described in the specifications deposited in the office of the Project Engineer, National Institute of Technology, Warangal with such variations by way of alternations or additions to and omissions from the said works and method of payment as are provided for in the “ conditions of the contract” for the sum of Rupees..... are such other sum as may be arrived at under “ payment on lumpsum basis or by final measurement at unit rates”.

I / We have also quoted the overall tender percentage over the estimated cost of work in the financial bid annexed ( in words and figures ) for which I / We agree to execute the work when the lumpsum payment under the terms of the agreement is varied by payment on measurement quantities.

I / We have quoted overall tender percentage over the estimated cost of work in the financial bid, both in words and figures. In case of any discrepancy between the rates quoted in words and figures the rates quoted in words only shall prevail.

I / We agree to keep the offer in this tender valid a period of three months mentioned in the tender notice and not to modify the whole or any part of it for any reason within above period. If the tender is withdrawn by me / us for any reason whatsoever, the earnest money paid by me/us will be forfeited to the National Institute of Technology, Warangal.

I / We hereby distinctly and expressly, declare and acknowledge that, before the submission of My/our tender I/We have carefully followed the instructions in the tender notice and have read the A.P.S.S. and the preliminary specifications therein and the A.P.S.S. addenda volume and that I/We have made such examinations of the contract documents and or the plans, specifications and quantities and of the location where the said work is to be done and such investigation of the work required to be done and in regard to the material required to be furnished as to enable me/us to thoroughly understand the intention of same and the requirements, covenants agreements, stipulations and restrictions contained in the contract, and in the said plans and specifications; and distinctly agree that I/We will not hereafter make any claim or demand upon the Institute based upon or arising out of any alleged misunderstanding or misconception / or mistake on my/our part of the said requirement, covenants, agreements, stipulations, restrictions and conditions.

I / We enclosed to my/our tender schedule a crossed demand draft no.. .....  
 Dt.....Rs.....(Rupees.....  
 .....) as earnest money not to bear interest.

I / We shall not assign the contract or sublet any portion of the same. In case if it becomes necessary such subletting with the permission of the Director shall be limited to (1) labour contract (2) material contract (3) Transport contract and (4) Engaging special items of work enjoined in A.P.S.S.

If my/our tender is not accepted the sum shall be returned to me/us on application when intimation is sent to me/us of rejection or at the expiration of three months from last date of receipt of this tender, whichever is earlier. If my/our tender is accepted the earnest money shall be retained by the Institute as security for the due fulfillment of this contract. If upon written intimation to me/us by the Director’s office, I / We fail to attend the said office on the date herein fixed or if upon intimation being given to me/us by the Project Engineer of acceptance of my/our tender, and if I/We fail to make the additional security deposit or to enter into the require agreement as defined in condition-3 of the tender notice then I/We agree the forfeiture of the earnest money. Any notice required to be served on me/us hereunder shall be sufficiently served on me/us if delivered to me/us personally or forwarded to me/us by post to (registered or ordinary) or left at my/our address given herein. Such notice shall if sent by post be deemed to have been served on me/us at the time when in due course of post it would be delivered at the address to which it is sent.

I / We fully understand that the written agreement to be entered into between me/us and Director, National Institute of Technology, Warangal shall be the foundation of the rights of the both the parties and the contract shall not be deemed to be complete until the agreement has first been signed by me/us and then by the Director, National Institute of Technology, Warangal.

I am / We are professionally qualified and my/our qualifications are given below.

**CONTRACTOR**

**PROJECT ENGINEER**

Name	Qualification
------	---------------

I/We will employ the following technical staff for supervising the work and will see that one of them is always at site during working hours, personally checking all items of works and paying extra attention to such works as required special attention (eg) Reinforce concrete work.

Name of members of technical Staff proposed to be employed	Qualifications
------------------------------------------------------------	----------------

I/We declare that I/We agree to recover the salaries of the technical staff actually engaged on the work by the Institute from the work bills, if I/We fail to employ technical staff as per the tender condition.

**TENDERERS / CONTRACTOR'S CERTIFICATE :**

- 1) I/We hereby declare that I/We have perused in detail and examined closely the Andhra Pradesh Standard Specifications and all clauses of the preliminary specifications with all amendments and have either examined all the standard specifications or will examine all the standard specifications for items for which I/We tender, before I/We submit such tender and agree to be bound and comply with all such specifications for this agreement which I/We execute with the National Institute of Technology, Warangal.
  - 2) I/We certify that I/we have inspected the site of the work before quoting my rates, I/We have satisfied about the quality, availability and transport facilities for stone sand and other materials.
  - 3) I/We am/are prepared to furnish detailed data in support of all my quoted rates, if and when called upon to do so without any reservations.
  - 4) I/We hereby declare that I/We will pay an additional security deposit in terms of conditions 12.3 of tender notice.
  - 5) I/We hereby declare that I am / We are accepting to reject my tender in terms of conditions of 12.4 of tender notice.
- 
- 6) I/We hereby declare that I/We will not claim any price escalation.
  - 7) I/We hereby declare that I am / We are accepting for the defect liability period as 24 months instead of 6 months under clause 28 of APSS.
  - 8) (a) I/We declare that I/We will procure the required construction materials including earth and use for the work after approval of the Project Engineer. The responsibility for arranging and obtaining the land for borrowing or exploitation in any other way shall rest with me/us for the materials for construction, I/We shall ensure smooth and un-interrupted supply of materials.  
(b) I/We declare that the responsibility for arranging and obtaining the land for disposal of spoil/soil not useful for construction purposes shall rest with me/us.  
(c) I/We declare that I/We shall not claim any compensation or any payment for the land so arranged for disposal of soil and the land for borrow area. My/our quoted overall tender percentage are inclusive of the land so arranged and I/We will hand over the land so arranged for disposal of soil to the Institute after completion of work.  
(d) I/We declare that I/We will not claim any extra amount towards any material used for the other than the quoted percentage for respective items of work.
  - 9) I/We declare that I/we will execute the work as per programme, and if I/We fail to complete the work as per the programme. I/We abide by the condition to recover liquidated damages as per the tender conditions.
  - 10) I/We declare that I/We will abide for settlement of disputes as per the tender conditions.

**DECLARATION OF THE TENDERER**

- 1) I/We have not been black listed in any department in Andhra Pradesh due to the failure to return the tender schedule within 7 days after receiving them when I/We did not intend to tender for the works on earlier occasions.
- 2) I/We have not been demoted to the next lower category for not filing the tenders after buying the tender schedules in a whole year and my/our registration has not been cancelled for a similar default in two consecutive years.
- 3) I/We agree to disqualify me/us for any wrong declaration in respect of the above or other documents and to summarily reject my/our tender.  
Address of the Tenderer:
- 4) I/We certify that we are not having any other work other than those specified in Statement IV address of the Tenderer:

**CONTRACTOR**

**PROJECT ENGINEER**

**SCHEDULE – A**  
**PREAMBLE - SCHEDULE OF RATES AND APPROXIMATE QUANTITIES**

1. The quoted rates shall include all construction materials. No escalation in rates will be paid. The tenderer has to quote overall tender percentage considering all the aspects of the tender to complete the work as per the A.P.S.S., I.S., specifications, the special specifications appended, Drawings etc.
2. If there is any contradiction between A.P.S.S. and I.S. specifications, listed and detailed technical specifications, the later shall prevail.
3. In case of a job for which specifications are not available with the schedule in A.P.S.S. or in I.S. code and are required to be prescribed, such work shall be carried out in accordance with the written instructions of the Project Engineer recorded in the “Order Book”.
4. The contractor should use the excavated useful soils and stone for construction purpose. Soils used for construction will be at free of cost and the cost of stone used for construction purpose will be recovered from the contractors bill at the rates fixed by the Project Engineer per cubic meter for stack measurements. Soils can be used either for homogeneous section or in hearting or in casing zone based on the suitability.
5. The contractor should quote his tender keeping in view of the above aspects.
6. The quoted overall tender percentage over the estimated cost in the financial bid shall also include the work of any kind necessary for the due and satisfactory construction, completion and maintenance of the work to be intent and meaning of the drawings and the specifications and further drawings and orders that may be issued by the project Engineer from time to time. The quoted tender shall include compliance by the contractor with all the 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 and lighting. It shall also include safety of workers, first-aid equipment, suitable accommodation for the staff and workmen, with adequate sanitary arrangements, the effecting and 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 protections of the works and adjoining land.
7. The contractor shall ensure that, the quoted overall tender percentage shall cover all stages of work such as setting out, selection of materials, selection of construction methods, selection of equipment and plant, employment of personnel and supervisory staff, quality control testing etc. The work of building in quality assurance shall be deemed to be covered in the quoted rates.
8. Additions and alterations in the Schedule of quantities will disqualify the tender.
9. In case of discrepancies between the written descriptions of the item in the schedule ‘A’ and the detailed description in the specification of the same item the latter shall be adopted.
10. The quantities here given are those upon which the lumpsum tender cost of the work is based but they are subject to alteration, omissions, deductions or additions as provided for in the conditions of this contract and do not necessarily show the actual quantities of work to be done.
11. It is to be expressly understood that the measured work is to be taken net (not with standing any custom or practice to the contrary) according to the actual quantities when in place and finished according to the drawings or as may be ordered from time to time by the Project Engineer and the cost calculated by measurement or weight, at their respective rates without any additional charge for any necessary or contingent works connected therewith. The rates quoted are for works in situ and complete in every respect.

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**PROJECT ENGINEER**



**ADDENDUM TO SCHEDULE 'A'**

- I. For all items of work in excess of the quantities indicated the rate payable for such excess quantities will be either the tendered rates or SS rates for the item plus or minus over all tender percentage accepted by the competent authority whichever is less. The SS rate means the rates for the year with which the estimate is prepared / sanctioned for comparing the tender.
- 2 The overall tender percentage quoted over the estimated cost of the total work in the financial bid will be operated upon the estimated prices of each item to arrive at the unit price of each item for making payment to the contractor as and when required.
- (i). The contractor is bound to execute all supplemental works that are found essential incidental and inevitable during execution of main work.
- (ii). However the execution of such supplemental items of works is subject to the conditions stipulated in Govt. Memo No. 921801/5621/PWD dated 15-9-1960 and G.O.Ms.No. 900 PWD dated 6-8-1975.
- 3 The payment of rates for such supplemental items of work will be regulated as under.
- 3.1 Supplemental items directly deducible from similar items in the original agreement.
- 3.2 The rates shall be derived by adding to or subtracting from the agreement rate of such similar item the cost of the difference in the quantity of materials labour between the new items and similar items in the agreement worked out with reference to the schedule of rates adopted in the sanctioned estimate with which the tenders are compared plus or minus over all tender percentage.
- 3.3 (a) Similar items but the rates of which cannot be directly deduced from the original agreement.  
(b) Purely new items which do not correspond to any item in the agreement.
- 3.4 The rates of all such items shall be estimated rates plus or minus overall tender percentage.

**Note:** It may be noted that the term estimate rate used above means the rate in the sanctioned estimate with which the tender is compared or if no such rate is available in the estimate the rate derived will be with reference to the schedule of rates adopted in the sanctioned estimate with which tenders are compared.

**SCHEDULE 'B'**  
**LIST OF DRAWINGS**

The drawings enclosed to the tender documents shall be used as a reference only.

Sl. No.	Drawing number	Description
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**CONTRACTOR**

**PROJECT ENGINEER**

**SUPPLEMENT LIST**

As referred to in the specifications including the preliminary specification of the Andhra Pradesh Standard Specifications.

Sl. No.	Drawing no.	Description	Date on which the Drawing was supplied
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- 
- 1) The plans enclosed with the tender are liable to be altered during execution of work as per necessity of site conditions. The rates quoted by the contractor for various items shall hold good for execution of work even with altered plans.
  - 2) One set of drawings on the basis of which actual execution of the work is to proceed shall be furnished free of cost to the contractor by the Project Engineer progressively according to the work programme submitted by the contractor and accepted by the Project Engineer, drawings for any particular activity shall be issued to the contractor atleast 30 days in advance of the scheduled date of the start of the activity. However, no extra claims by the contractor towards any delay in issue of the drawing or issue of any revision / change to the drawings issued earlier shall be admissible. The Project Engineer shall intimate the contractor 7 days in advance regarding any delay in issue of drawings, the contractor shall be granted extension of time in terms of conditions 13.6 of tender notice.
  - 3) Signed drawings above shall not be deemed to be an order for work unless they are entered in the agreement or schedule of drawings under proper attestation of the contractor and Project Engineer or unless they have been sent to the contractor by the Project Engineer with a covering letter confirming that the drawing is an authority for work in the contract.

**DISCREPANCIES:**

- a) In case of discrepancies between documents the following order of procedure shall apply.
  - i) Between the written description of written dimensions in the drawings and the corresponding one in the specifications, the latter shall apply.
  - ii) Figured dimensions shall supersede scaled dimensions. The drawing on a large scale shall take precedence over those on a smaller scale.
  - iii) Drawings issued as construction drawings from time to time shall supersede the tender drawings and also the corresponding drawings previously issued.

Note: The contractor should not execute any component of work without obtaining the working drawings. Any work done without drawings shall be at the contractors responsibility only. Acceptance of such work will be at the discretion of the Project Engineer.

**SECURITY CLAUSE:**

The drawings and specifications made available to the tenderer shall exclusively be used for work and they are restrained from passing on each plan to any unauthorized hand either in parts or in full under the provisions of section-3 and 5 of the official secrets act 1923. Any violation in this regard will entail suitable action under appropriate clause of official secrets Act 1923.

**SCHEDULE 'C'****CONTRACTOR****PROJECT ENGINEER**

**SPECIAL SPECIFICATIONS (S.S.) - SCOPE OF WORK**

The information and data furnished herein relevant to the work and site conditions are general. It shall be the responsibility of the contractor to fully acquaint himself with the nature and location of works, quarries, local conditions and other aspects which are relevant to the work.

- A) Location of the work : National Institute of Technology, Warangal.
- B) S.S.R.(year and extra allowances considered): 200 - 200 of R & B Circle,  
Warangal.
- Area allowance ..... %
- Importation of labour and labour amenities..... %
- Sales Tax ..... 2.8 %
- C) Estimated amount and L.S.provisions (E.C.V.)  
(considered in the estimate for working out  
through rates).

**SCHEDULE – D  
MATERIALS AND WORKMANSHIP****1. GENERAL**

- 1.1.1. a) No material shall be used for construction in any work until notice has been given by the Project Engineer that the test results are satisfactory. No oral instruction should be followed.
- b) Recommendation of stacking and storage of construction materials at site shall be in accordance with IS: 4082-1977.
- c) To be of the best Quality: All materials, articles and workmanship shall be the best of their respective kinds for the class of work described in the contract specifications and schedule. The work 'best' as used in the specifications shall mean, that in the opinion of the Project Engineer there is no superior quality of material or finish of articles in 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 Project Engineer, furnish him with the vouchers to prove that the materials are such as are specified.
- 1.1.2. The tenderer has to do his own testing of materials and satisfy himself that they conform to the specifications of respective I.S.I. codes, before tendering.
- 1.1.3. The contractor shall himself procure the required construction materials of approved quality including the earth for formation of embankment and water from quarries/ sources of his choice of materials required for the work shall be got all such quarries / sources approved by the Project Engineer in writing well before their use on the work. The materials as per standards of relevant I.S.I. I.R.C. codes and conforming to the standards and specifications of MOST codes only will be accepted.

**1.2. SAMPLES**

- 1.2.1. The representative samples of all materials should be procured by the contractor and arrange to send them to the Project Engineer for conducting pre-construction tests and approval duly informing the source of materials from where he has collected the samples.
- 1.2.2. The raw and processed samples should be supplied at the contractor's expense to the Project Engineer within 14 days after signing of the agreement. For testing of samples a maximum of 60 days time will be required. Each samples a maximum of 60 days time will be required. Each sample shall approximately consist of 100 Kgs of materials or as directed by the Project Engineer.
- 1.2.3. If the contractor desires to change the source of materials, he shall supply the raw and processed representative samples at his own expense to the Project Engineer at least 60 days before its use for pre-construction tests and approval.

**CONTRACTOR****PROJECT ENGINEER**

- 1.2.4 In addition to pre-construction tests and approval of quarries, the Project Engineer may test the aggregate for their suitability during their processing. The contractor shall provide such facilities as may be necessary for procuring at no extra cost representative samples at the aggregate processing plant and at the batching plant. Final acceptance of the materials will be based on the acceptable test results of samples taken from the construction site only.
- 1.2.5 The contractor has to bear the cost of raw and processed representative samples, laboratory tests and field tests. The contractor has to arrange the required men and material for collecting the samples and bear the cost thereon required for transporting them to the laboratory also. The contractor should quote his rates for finished item of work for the item of works of schedule 'A' keeping in view the cost of pre and processed samples to be submitted to the Project Engineer and also the rate of progress and the time required for conducting laboratory tests. No extension of time will be granted for any delay occurred in collecting the samples and conducting pre-construction tests in the laboratory and getting approval.

### **1.3. PROCUREMENT**

- 1.3.1. The rates quoted for all items shall include cost and conveyance of all materials with all leads.
- 1.3.2. It will be the tenderer's responsibility to satisfy himself that sufficient quantities of construction materials required for the works shall exist in the borrow areas or quarry sites. The Institute does not accept any responsibility either in handing over the quarries or procuring the materials or any other facilities. The tenderer will not be entitled for any extra rate or claim for the misjudgment on his part for quantity and quality of materials available in the quarries.
- 1.3.3. Failure by the Tenderer to have done all the things, which in accordance with this condition, he is deemed to have done, shall not relieve the successful tenderer of the responsibility for satisfactory completing the works as required at the rates quoted by him.
- 1.3.4. The contractor shall make his own enquires regarding the availability of other materials and make his own arrangements for procuring them.
- 1.3.5. The materials for embankment construction shall be obtained and got approved by the Project Engineer the responsibility for arranging and obtaining the land for borrowing or exploitation in any other way shall rest with the contractor, who shall ensure smooth and uninterrupted supply of materials for the quantity required in construction during the construction period. No separate cost will be paid.
- 1.3.6. Similarly, the supply of aggregates for construction shall be of approved quality approved by the Project Engineer. Responsibility for arranging uninterrupted supply of materials from the source shall be that of the contractor. No separate cost will be paid.
- 1.3.7. The contractor has to open and develop the quarry for the stone and aggregate required. All incidentals such as removal of over burden, stripping etc. in the quarry should be done by the contractor. The contractor shall make his own arrangements for maintaining the approach roads to quarry for conveying the materials to the site of work.
- 1.3.8. The contractors have to make their own arrangements for storage and conveyance of water and storage at work site for construction purpose, no extra payment will be made to the contractor over and above their tender rates for water lead for storage arrangements.
- 1.3.9. The tenderer should inspect the site and check-up the possible water source for carrying out the entire work throughout the year in monsoon and non-monsoon seasons irrespective of the quantum of rainfall and quote their rates accordingly. No subsequent claims for extra water lead will be entertained under any circumstances.
- 1.3.10. The materials and labour utilized in the execution of work by the contractor shall not be less than that given in the A.P.P.W.D. standard data for the relevant item.
- 1.3.11. Lay-out of material stacks: The contractor shall deposit materials for the purpose of the work on such parts only of the ground as may be approved by the Project Engineer. He shall submit, for the approval of the Project Engineer, before starting work, as detailed site survey clearly indicating positions and areas where materials shall be stacked and sheds built.

### **1.4. DEFECTIVE MATERIAL**

- 1.4.1. All materials which the Project Engineer/ his representative has determined as not conforming to the requirements of the contract will be rejected whether in place or not. They shall be removed immediately from the site as directed. Materials, which have been found defective, and which have been subsequently corrected, shall not be used in the work unless approval accorded in writing by the Project Engineer. Upon failure of the contractor to comply with any order of the Project Engineer, given under this clause, the Project Engineer shall have authority to cause the removal of rejected material and to deduct the removal cost thereof from any money due to the contractor.

**CONTRACTOR**

**PROJECT ENGINEER**

- 1.4.2. The rejected rubble and spoils should be dumped far away from work spot as directed by the Project Engineer. The muck boulders etc., fallen on the approach roads, ramps etc., below the place should be removed by the contractor immediately after blasting at the contractor's cost. In case the above materials are not cleared within 24 hours of issue of departmental instructions, the same will be removed by the Institute and the cost thereof will be recovered from the contractors bills.
- 1.4.3. The Institute will not be liable for any compensation due to breakdown in machinery, water supply or electricity or delay in supply of materials and for damage due to rains and floods.
- 1.4.4. The Project 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 wrought materials by reason 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 Project Engineer. Replacement shall at once be made in accordance with the specifications and drawings, at the contractor's expense.
- 1.4.5. In case of default on the part of the contractor to carryout such orders the Project 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.
- 1.4.6. Project Engineer's decision: To prevent dispute 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 Project Engineer shall be final and binding on the contractor and in any technical question which may arise touching the contract, the Project Engineer's decision shall be final and conclusive. In the case of any difference between Project Engineer and contractor on matters regarding materials, specifications, mode of procedure and the carrying out of the work the contractor shall have a right of appeal to Director, National Institute of Technology, Warangal and the decision of the later shall be final and conclusive.

**1.5 TEST INSPECTION AND REJECTION OF DEFECTIVE MATERIAL AND WORK:  
LABORATORY SETUP:**

- 1.5.1. For the works costing Rs.50.00 lakhs and above the contractor shall setup a laboratory and equip the same with adequate equipment and personnel in order to carry out all required tests and quality control work as per specifications or as directed by the Project Engineer. The internal layout of the laboratory shall be as given in the drawing and list of equipment shall be got approved from the Project Engineer in advance.
- 1.5.2. "The cost of laboratory building including services, essential supplies like water, electricity, sanitary and their maintenance and cost of all equipment, tools, materials, labour and incidentals to perform tests and other operations of quality control according to the specifications requirement shall be deemed to be incidental to the work and no extra payment shall be made for the same".

**1.6 STANDARD TESTS AND QUALITY**

- 1.6.1 The day to day and periodical tests to be carried out on materials, finished or otherwise shall be specified by the Project Engineer from time to time and the contractor shall allow all facilities and co-operation towards collection of samples and cores etc., the contractor shall however make good at his cost, materials, mixes and cores with similar or other materials as may be directed and to the satisfaction of the Project Engineer.
- 1.6.2 An authorized representative of the contractor shall remain present at the time when the samples or cores etc., are taken, shall authenticate the fact if so required. Should the contractor's agent fail to be present as aforesaid the samples or cores etc., taken by the Project Engineer or his representative shall be considered to be authentic. The contractor however will be informed of the details of such samples and cores etc., having been taken.
- 1.6.3 The materials, mixes and cores etc., shall be tested day to day periodically at the laboratory available at the site or at other laboratory or place that the Project Engineer may direct and the results given thereby shall be considered correct authentic by the contractor. It shall then be the contractor's responsibility to execute work to the standard, based on the laboratory designs and tests.
- 1.6.4 The contractor shall provide proper facilities at all times, for the testing of materials, and inspection of work by the Project Engineer, and the Project Engineer shall accordingly also have access at all times to the place of storage or manufacture where materials are being made for use under the contract to determine that manufacture is proceeding in according with the drawings and specifications.

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

**2.1 BITUMEN:**

- 2.1.1. The contractor should procure as bulk or packed bitumen required only from the refineries as per prescribed specifications of Indian standards and same should be provided at site with proper care. Necessary ISI certificate should be produced to the Project Engineer before use. The original bills of procurement should be submitted to the Project Engineer for making payment of the item involving usage of bitumen.

**2.1.2. STORAGE OF BITUMEN:**

Drums shall be carefully handled and the presence of the Supervisor/Work Inspector is essential during loading, transport and unloading. The handling shall be done using wooden ballies on which the drums should gently be rolled. The drums shall not be stored in low laying area wherein rain water is likely to collect around the drums and enter into the drum. This is a precaution against intrusion of water. The Bitumen drums shall be stacked with the drums laying on their side so that any rainwater that fall on them will be quickly drained. They should preferably be stored under the shade of tree and away from road side so that the urchin and unsocial elements will not prick holes. In spite of precautions, if holes be kept upside so that the Bitumen will not lead from the holes.

Bitumen required for the work shall be stored at a central location of the work site and the storage area shall be located suitably. The material required for the work of each day shall be conveyed from this storing place to the work spot each day. Under no circumstances, shall Bitumen drums be distributed all along the road in the first instance on the plea that the materials will be used up eventually.

**2.2 CEMENT:**

- 2.2.1. The contractor has to make his own arrangements for the procurement of cement required for the works subject to the following.
- 2.2.2. The contractor shall procure 43 grade ordinary Portland cement conforming to IS 8112-1989 or 53 grade opc as per IS 122689-1990 in standard packing of 50 Kg/bag as fresh as possible from the authorized manufactures dealers. Cement procured from non B.I.S. license firms will not be allowed. The contractor shall make necessary arrangements at his own cost to the satisfaction of the Project Engineer for actual weightment of random samples from the available stock. Cement shall be got tested as directed by the Project Engineer at least 15 days in advance before its actual use on work. Cement required for the testing shall be conducted in accordance with I.S. 4031-1988 and I.S. 4032-1968 and I.S. 3535-1986.
- 2.2.3. The contractor has to purchase the cement on the name of work and on the name of contractor. The cement without mentioning the above two names will not be accepted. Vendor's test certificates and weightment most bills are to be furnished to the Project Engineer. Any quantity purchased without test certificates will not be accepted for use on the work.
- 2.2.4. A) The contractor should procure the cement required during the next 30 days, atleast a fortnight in advance to facilitate conducting test on the quality of cement, so brought to site and shall be stored in accordance with clause no.112 of APSS . The contractor shall forth with remove from the work site any cement that the Project Engineer may disallow for use on account of its failure to meet with the required standards.  
B) No cement procured by the contractor shall be used in any work until notice has been given by the Project Engineer, that test results are satisfactory. Physical and chemical requirement shall conform to IS 269-1989.  
c)The contractor has to furnish the test certificate and samples for testing of each batch and each consignment to the Project Engineer immediately after receipt of cement into the godown for verification and testing.
- 2.2.5 The contractor will have to construct sheds at approved locations having a capacity for storing cement required for not less than 30 days use. The Project Engineer or his representative shall have free access to such stores at all times for verification of the stocks received, used on works and balance. A stock register should be kept in the store shed to facilitate such verification. If any difference is observed based on the carriage inwards, carriage outwards, theoretical requirement of cement for finished work, the contract will be cancelled and the contractor will be black listed.
- 2.2.6 The contractor shall further, at all times, satisfy the Project Engineer on demand by production of records and books or by submission of returns and other proofs as directed that only the cement tested and approved by the Project Engineer is being used. The contractor shall at all times keep his records up-to-date to enable the Project Engineer to apply such checks as he may desire.

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- 2.2.7 Cement more than 3 months shall invariably be tested to ascertain that it satisfies the acceptability requirements. If any reduction in strength of cement is observed in the tests the contractor shall forth with remove the respective consignment from the stores. For such rejection/removed no claim will be entertained.
- 2.2.8 Usage of cement on works, be it for concrete or for mortar or otherwise, should be done only by weight and not by volume.
- 2.2.9 Cement Storage: Recommendations of stacking and storage of cement at site shall be as per IS: 4082-1977.
- a) Cement bags shall be stored in dry, weather proof godowns, adequate precautions shall be taken to ensure stacking of cement bags in such as to keep them about 150mm to 200mm clear above floor and 250mm to 300mm clear of walls.
  - b) The height of stack shall not ordinarily be more than 10 bags and in no case more than 15 bags (except for very short periods) to prevent possibility of lumping up under pressure. Cement bag shall be stacked in a manner to facilitate their removal and use in the order in which they are received.
  - c) Cement shall be stored at the work site in such a manner as to prevent deterioration to moisture.
  - d) Cement which has become caked or other wise damaged by getting wet or for any other reason shall on no account be used on the work.
  - e) If cement is not properly stored as specified above, the contractor will not be allowed to use the cement for the work.
- 2.3. **STEEL:**
- 2.3.1 The various types for steel shall conform to relevant I.S.pecifications as provided in A.P.S.S. no. 126.
- 2.3.2 The contractor has to make his own arrangements for procurement of tested steel required for the work. Steel for use in buildings, water supply schemes etc., shall invariably be procured from main manufacturers. Test certificates conforming to I.S. No. 1786-1985 are to be furnished to the Project Engineer before using the steel on work. The HYSD steel (IS:1786-1985) bars should have TOR mark.
- 2.3.3 The contractor has to purchase the steel on the name of work and on the name of contractor and furnish the same to Project Engineer. The steel without mentioning the above two names will not be accepted, vendors test certificates and weighment bills are to be furnished to the Project Engineer. Any quantity purchased without test certificates will not be accepted for use on the works.
- 2.3.4 If any difference is observed based on carriage inwards, carriage out wards theoretical requirement of steel for finished work, the contract will be cancelled and the contractor will be black listed.
- 2.3.5 The diameter and weight of steel should be as per I.S. 1786-1985 or relevant I.S. specification with subsequent revisions from time to time.

Sl. No.	Diameter of rod	Section weight in kilogram per running metre both for MS and HYSD steel
1.	6 millimeters	0.22
2.	8 millimeters	0.39
3.	10 millimeters	0.62
4.	12 millimeters	0.89
5.	14 millimeters	1.21
6.	16 millimeters	1.58
7.	18 millimeters	2.00
8.	20 millimeters	2.47
9.	22 millimeters	2.98
10.	25 millimeters	3.85
11.	28 millimeters	4.83
12.	32 millimeters	6.31
13.	33 millimeters	6.71
14.	36 millimeters	7.99
15.	40 millimeters	9.86
16.	42 millimeters	10.88

Note: If any rods other than those specified above are used, the weights shall be as per standard steel tables.

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**2.3.6 PROCUREMENT:**

- a) The contractor has to furnish the test certificates issued by the vendors and samples for testing for each batch and each consignment to the Project Engineer immediately after receipt of steel in the stock yard at site of work for verification and for testing.
- b) No steel procured by the contractor shall be used in any work until notice has been given by the Project Engineer, that the test results are satisfactory.

**STORAGE:**

- a) Reinforcement steel and binding wire shall be stored above ground surface upon platform, skids or other supports protected as far as practicable from surface deteriorations by direct contact with undesirable elements or by exposure to conditions producing rust and corrosion. Bars shall be so supported as to avoid distortion and sagging of long lengths. All the reinforcement of same designation shall be stacked separately and distinctly marked.
- b) Recommendation of stacking and storage of steel at site shall be in accordance with IS: 4082-1977.

**2.4 STONE FOR MASONRY:**

## 2.4.1. General

2.4.2. The following specifications shall govern the quality of material and general practices of construction of masonry for the dams and abutment structures like spill ways non-over flow dams, retaining walls, regulators, bridges buildings and other massive masonry structures with a view to ensure strength durability, impermeability and uniformity. The masonry shall conform generally to IS: 8605-1977 and special specifications elaborated hereunder.

## 2.4.3. MATERIALS:

## 2.4.4. Stone

2.4.5. **Quality:** All stones used shall be hard, dense, durable, tough sound and clean. They shall be free from decay, weathered faces, soft seams, coatings, holes, veins, flaws, cracks, stains and other defects stones not in uniform colour texture and/or with stains may be permitted only after proper tests.

2.4.6. **Strength:** The strength of stones shall be adequate to carry the load imposed allowing a suitable factor of safety the crushing strength shall be determined in accordance with the IS: 1121(part-I) 1974, and shall be not less than what is detailed below:

Sl.No.	Type of stone	Minimum crushing strength
1.	Granite	1,000 kg/sq.cm.
2.	Basalt	400 kg/sq.cm
3.	Lime stone	200 kg/sq.cm

2.4.7. **Water absorption :** The percentage of water absorption shall generally not exceed 5 percent by weight as determined in accordance with IS: 1124-1974/

2.4.8. **Stone for masonry:** The stone for masonry shall satisfy the requirement in respect of compressive strength, durability and water absorption and its general quality as indicated in 5.6 to 5.8. The size of stone shall normally vary from 0.05 to 0.01cum. The stones shall be taken from quarries approved from Geological and Engineering considerations. No stones shall weigh less than 25 kg. The stone used in the hearting shall be roughly cubical in shape. No stone weighing between 75 kg and 150 kg shall be less than 225mm in any direction and no weighing between 25 kg and 75 kg shall be less than 150mm in any direction.

2.4.9. Spalls with minimum dimensions of 200mm to 100mm shall be used to wedge into thick mortar spaces. They shall not normally exceed 10 percent of the volume of stone masonry.

2.4.10. Stone for coursed face work: The height of the stone for face work shall be uniform and is recommended to be 300mm including mortar joint. The length and depth of the face stone shall not be less than the height of the stone. At least 50 percent of the stones shall have length more than twice the height of the stone. At least one third of the stones shall be bond stones projecting not less than 2 ½ times the height into the masonry. The remaining shall be header stones with depth not less than 1 ½ times the height of the stone. The stones shall be hammer dressed on face and one line chisel dressed on bed, top and sides for a minimum depth of 75mm up to which the stones shall be true and rectangular. Beyond 75mm depth, the ones may be tapered but the tail end of the stones shall have at least half the area of the face.

Brushing on the faces of the stones shall not project more than 40mm.

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- 2.4.11 **Header stones:** The header stones shall not be less than 300mm in length, one and half times of the height in depth.
- 2.4.12 **Stretcher stones:** The stretcher stones shall not be less than 600 mm in length and not less than its height in depth.
- 2.4.13 **Quoins:** Quoin stones shall be of the same height as the faces but shall be true and rectangular on two faces with the face dressing for 75 depth in beds and sides. The stone shall be at least 300 mm long on one face and 450mm on the other face.
- 2.4.14 **Bond stones:** The bond stones shall not be less than 300mm in length and two and half times its height in depth.
- 2.4.15 **Stone for uncoursed face work:** Stones for uncoursed face work shall be selected from stones meeting the requirement of stones for coursed face work ( see 5.11) except that the stones shall be hammer dressed. The stones shall be nearly rectangular.
- 2.5. **STACKING :**  
Stacking shall be done as detailed below at the locations specified or ordered by the Project Engineer.
- i) Stacking shall be done as detailed below at the locations specified or ordered by the Project Engineer.
  - ii) Materials shall be stacked on erect ground. Stacking shall not be done in flood zones or in water logged areas.
  - iii) Rough stone shall be packed so closely as to give minimum quantity of voids possible without actual dressing of stone to fill interstices. In case of improper stacking done by the contractor the Project Engineer shall have the right to either reject the stacks partly or completely.
  - iv) Unless otherwise specified, templates shall be provided to the size and dimension of the stack as may be specified at the contractor's expense.
- 2.6 **COARSE AGGREGATE :**
- 2.6.1 **General:** For the purposes of these specifications, the term "Coarse Aggregate" designates clean well graded aggregate most of which is retained on 4.75mm I.S. Sieve and containing only so such finer material as permitted for various types described under clause 2.2. of I.S. 383-1970. Coarse aggregate for concrete shall consist of uncrushed gravel of stone, crushed gravel or stone and partially crushed gravel or stone. Course aggregate shall generally have uniform and stable moisture content. In case of variations, clause 9.2.3. of I.S. 456-1978 shall govern during batching.
- 2.6.2 **Quality:** The coarse aggregate shall consist of naturally occurring (crushed or uncrushed) stones and shall be hard, strong, durable clear and free from veins and adherent coating and free from injurious amounts of disintegrated, pieces alkali. Aggregate will be rejected, if it fails to meet any of the following requirements.
- 2.6.3 **Los-Angeles abrasion test:** The abrasion value of aggregated when tested in accordance with the method specified in I.S. 2386 (part-IV) using Los-Angels machine shall not exceed 30% for aggregates to be used in concrete for wearing surface and 50% for aggregate to be used in other concrete.
- 2.6.4 **Aggregates crushing strength test:** Aggregate crushing value, when determined in accordance with I.S. 2386(part-IV) 1963 shall not exceed 45% for aggregate used for concrete other than wearing surface and 30% for wearing surfaces. As an alternative to the crushing strength test, aggregate impact value will be determined with the method specified in I.S. 2386(part-IV) 1963, the aggregate impact value shall not exceed 45% by surface, and 30% by weight for concrete for wearing surface such as runways, roads and payments.
- 2.6.5 **Soundness Test:** The coarse aggregate to be used for all concrete works shall pass sodium or magnesium sulfate accelerated soundness test specified in I.S. 2386 (part-V)-1963 and the average loss of weight after 5 cycles shall not exceed the limits specified in clause 3.6.67 of I.S. 383-1970.
- 2.6.6 **Specific Gravity:** 2.60 minimum.
- 2.6.7 **Deleterious materials:** The maximum quantity of deleterious materials in coarse Aggregate shall not exceed the limits specified in Table-1 or I.S. 386-1970 when tested in accordance with I.S. 2386-1963.

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### 2.6.8 GRADING:

- a) Coarse aggregate shall be well graded to give a dense concrete of the specified strength and consistency that will work readily into position without segregation and without the use of an excessive water content.

IS Sieve Designation	Percentage passing by weight for single size aggregated of nominal size						percentage passing by weight for aggregated of nominal size			
	63mm	40mm	20mm	16mm	12.5mm	10mm	40mm	20mm	16mm	12.5mm
80mm	100	--	--	--	--	--	100	--	--	--
63mm	85-100	100	--	--	--	--	--	--	--	--
40mm	0-30	85-100	100	--	--	--	95-100	100	--	--
20mm	0-5	0-20	85-100	100	--	--	30-70	95-100	100	100
16mm	--	--	--	85-100	100	--	--	--	90-100	--
12.5mm	--	--	--	--	85-100	100	--	--	---	90-100
10mm	0-5	0-5	0-20	0-30	0-45	85-100	10-35	25-55	30-70	40-85
4.75mm	--	--	0-5	0-5	0-10	0-20	0-5	0-10	0-10	0-10
2.36mm	--	--	--	--	--	0-5	--	--	--	--

However, the exact gradation required to produce a dense concrete of specified strength and desired workability shall be decided by the Project Engineer.

- b) The material passing through the screen shall be in grade ranging from 40mm to 4.75mm. Each grade shall be stacked separately.  
c) Specific gravity: 2.60 minimum

### iii) Storage:

- a) Aggregate shall be stacked in such way as to prevent the admixture of foreign materials such as soil, vegetable matter etc., Heaps of fine and coarse aggregates shall be kept separate.

### 2.7. FINE AGGREGATE (SAND):

2.7.1 **General:** The term sand is used to designate aggregate most of which passes 4.75mm I.S.Sieve and contains only so much coarser material as permitted in clause 4.3 of I.S. 383-1970. Sand shall be predominantly natural sand which may be supplemented with crushed sand to make up deficiencies in the natural sand grading.

2.7.2 Sand shall have a uniform stable moisture content. Determination of moisture content shall be made as frequently as possible the frequency for a given job being determined by the Project Engineer according to weather conditions. (I.S. 456-1978).

2.7.3 **Quality:** The sand shall consist of clean, dense, durable, un coated rock fragments as per IS : 383-1970.

2.7.4 Sand may be rejected if it fails to meet any of the following quality requirements.

2.7.5 **Organic impurities in Sand:** Colour no darker than the specified standard in clause 6.22 of I.S.2386 (Part-II) 1963 (Indian Standard method of test for Aggregate for concrete part-II estimation of deleterious materials and organic impurities).

2.7.6 **Sodium Sulphate Test for Soundness:** The sand to be used shall pass a sodium or Magnesium Sulphate accelerated test as specified in I.S. 2386 (Part-V) 1963 for limiting loss of weight.

2.7.7 **Specific gravity:** 2.6 minimum.

### 2.7.8 Deleterious Substances:

2.7.9 The amounts of deleterious substances in sand shall not exceed the maximum permissible limits prescribed in table I clause 3.2.1 of I.S. 383-1970 (Indian Standard Specifications for coarse and fine aggregates from natural source for concrete) when tested in accordance with I.S. 2386-1963.

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- 2.7.10 **Grading:** Sand for mortar shall conform to the grading of sand given in clause 4 of I.S. 2116-1980 as indicated below. Grading of sand for use in masonry mortars.

I.S. Sieve designation	Percentage by weight passing by mass
4.75 mm	100
2.36mm	90 to 100
1.18mm	70 to 100
600 micron	40 to 100
300 micron	5 to 70
150 micron	0 to 15

- 2.7.11. 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 sand particles. The sand for concrete as batched shall be well graded and when tested by means of standard sieves shall conform to the limits given in table 4 of I.S. 383-1970 and shall be described as Fine aggregates, grading zones-I, II, III and IV. Sand complying with the requirements of any of the four grading zones is suitable for concrete. But, sand conforming to the requirements of grading zone-IV shall not be used for reinforced cement concrete work.

2.7.12. **Fineness Modulus:**

- a) Sand shall have a fineness modules between 2.4 to 3.0 subject to the gradation specified in the preceding paragraph.
- b) The modules shall be computed by adding cumulative percentage of sand retained on the standard screens 4.75mm, 2.36mm, 1.18mm, 600 micron, 300 micron, 150micron, IS sieves and dividing the sum by 100. Graduation of sand shall be so controlled that the fineness modules of at least 9 out of 10 consecutive test samples of finished sand shall not vary by more than 0.10 from the average of 10 test samples. Sand having any deviation from the specified range of gradation and fineness modulus shall not be permitted to be used in work without the written permission of the Project Engineer.

**STORAGE:** All sand shall be stored on the site of work in such manner as to prevent intrusion of foreign matter.

- 2.8. **WATER:** The contractor shall make his own arrangements for water to be used for construction of the building.

2.8.1. 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. specifications no. 456-1978. Potable water is generally considered satisfactory for mixing and curing.

2.8.2. The Project Engineer will usually be made by comparison of compressive strength, water required, 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 LIMITS FOR SOLIDS :**

- |                       |                                                                     |
|-----------------------|---------------------------------------------------------------------|
| 1. Organic            | Maximum permissible limit 200 mg/litre                              |
| 2. Inorganic          | 3000 mg/litre                                                       |
| 3. Sulphates (as So4) | 500 mg/litre                                                        |
| 4. Chlorides (as CI)  | 2000 mg/litre for plain concrete work & 1000 mg/litre for RCC work. |
| 5. Suspended matter   | 200 mg/litre                                                        |

If any water to be used in concrete, mortar or grout is suspected by the Project Engineer as exceeding the permissible limits for solids, samples of water will be obtained and tested by the Project Engineer in accordance with I.S. 3025-1964.

**2.9. ADMIXTURES / AIR-ENTRAINING AGENTS :**

- 2.9.1. An admixtures air entraining agent may be used in the concrete in such quantities as to produce a total workable concrete as may be permitted, up to 5% by volume of concrete. The admixture agent shall satisfy the relevant specifications for air-entraining agents (I.S. 9103-1979) and the dosage shall be determined based on specific laboratory studies.

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- 2.9.2. The department will specify and approve the admixtures/Air-entraining agents required for the works. The use of such admixtures/Air entraining agents shall be made as per the conveyance, storage, bathing, mixing of admixtures shall be borne by the contractor and shall be included by him in the quoted rates for respective items of works involved in the use of cement.

**2.10. STORAGE OF MATERIALS :**

Storage of materials shall conform to the I.S. 458-1978 and I.S. 457-1957.

**SEIGNIORAGE CHARGES:  
SEIGNIORAGE CHARGES:**

Seigniorage charges : The seigniorage charges for the materials covered under this work shall be recovered from the contractor's bill at the following rates ( As per GO MS No.67 Industries and commerce ( Mines I) Department. Dt. 26-09-2015.

**RATE OF SEIGNIORAGE CHARGE FEE**

Sl. No.	Name of the Minor Mineral	Unit	Rates of Seigniorage Fee (in Rupees)
1	2	3	4
1)	Building stone	M3/ MT	Rs. 75/50
2)	Rough stone/Boulders	M3/ MT	Rs. 75
3)	Road Metal & Ballast	M3/ MT	Rs. 75
3a)	Dimensional stone used for Kerbs & Cubes	MT	Rs. 100
4)	Lime kankar / Lime stone	MT	The rate of Royalty as applicable to lime stone (other than L.D. Grade) in respect of Major Mineral as per the 2 <sup>nd</sup> schedule of the mines and Minerals (D&R) Act 1957
5)	Limeshell	MT	
6)	Marble	M3/ MT	Rs. 250/100
7)	Mosaic chips	MT	Rs. 45
8)	Muram / Gravel & Ordinary earth	M3 / MT	Rs. 30/20
9)	Ordinary sand / Sand manufactured from Boulders useful for Civil Construction	M3/ MT	Rs. 40/27
10)	Shingle	M3/MT	Rs. 25/17
11)	Chaleedony pebbles	M3/ MT	Rs. 75/50
12)	Fuller's earth / Bentonite	MT	Rs. 150
13)	Shale / Slate	MT	Rs. 150
14)	Rehmati	M3 MT	Rs. 25
15)	Limestone slabs		Rs. 8 per sqm or Rs. 100 per MT
a)(i)	Colour	--	Whichever is higher
a)(ii)	White	--	Rs. 4 per sqm or Rs. 50 per MT Which ever is higher
b)	Black	--	
16)	Ordinary clay, Silt and Brick Earth used in the manufacture of Bricks including Mangalore Tiles	--	Rs.6000 per kiln per annum for Bricks & Tiles

**Rate per Cubic meter**

17)	Granite useful for cutting and polishing	More than 270x150cm size	Below 270x150cm size	Below 75cm size
a)	Black granite	Rs. 3000	Rs. 2300	Rs. 1200
b)	Colour Granite	Rs.2300	Rs.2000	Rs. 1000

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**Schedule – II****RATES OF DEAD RENT**

Sl.No.	Name of the Minor Mineral	Rate of Dead Rent per hectare per Annum
1)	Black Granite	Rs. 1,00,000
2)	Color Granite	Rs. 80,000
3)	Limestone other than classified as major minerals used for lime burning for building construction purposes, Marble, Boulders, Building stone including stone used for Road Metal, Ballast Concrete and other Construction purposes, shale, slate and Phyllites, Mosaic Chips, Fuller's Earth, Bentotite & Dimensional stones used for Cubes & Kerbs	Rs. 50,000
4)	Gravel, Morrums, Shingle, Limestone slabs used for flooring purposes Limekankar Chalcedony, Pebbles used in the building purposes Limeshell for burning used for building purposes and Rehmatti	Rs. 40,000

**SCHEDULE – E****ADDITIONAL CONDITIONS SUPPLEMENTAL TO THE PRELIMINARY SPECIFICATION TO A.P.S.S. PROGRESS SCHEDULE****1. CONSTRUCTION PROGRAMME :**

- 1.1. The contractor shall furnish within 15 days of the order to start the work a programme showing the order of procedure in which he proposes expected to be achieved also indicating date of procurement and setting of materials plant and machinery. The schedule should be such as is practicable of achievement towards completion of the whole work in the time limit and in keeping within the programme specified under condition, in the tender notice and shall have the approval of the Project Engineer. Further rate for the progress in the schedule shall be kept up to date. In case it is subsequently found necessary to alter this schedule, the contractor shall submit sufficiently in advance the revised schedule incorporating necessary modification proposed and get the same approved by the Project Engineer. No revised schedule shall be operative without such acceptance in writing.
- 1.2. The Project Engineer shall have all times the right without any way violating this contract, or forming grounds for any claim, to alter the order of the works or any part thereof and the contractor shall after receiving such directions proceed in the order directed.
- 1.3. The contractor shall give written notice to the Project Engineer whenever planning or progress of the works is likely to be delayed or disrupted unless any further drawing or order including a direction, instruction or approval is issued by the Project Engineer within a reasonable time. The notice shall include details of the drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late. If, by reason of any failure or inability of the Project Engineer to issue within a time reasonable in all the circumstances any drawing or order requested by the contractor, the contractor suffers delay, then the Project Engineer shall take such delay into account in determining any extension of time.

**SPEED OF WORK :**

- 1.4. The contractor shall at all times maintain the speed of work to conform to the latest operative progress schedule, provide the Project Engineer with progress report and bar charts indicating the programme and progress once in a month. The Project Engineer may at any time in writing direct the contractor to slow down any part or whole of the work for any reason ( which shall not be questioned ) whatsoever, and the contractor shall comply with such orders of the Project Engineer. The compliance of such orders shall not entitle the contractor to any claim or compensation. Such orders of the Project Engineer for slowing down the work will however be duly taken into account while granting extension of time if asked by the contractor for which no extra payment will be entertained.
- 1.5. Work during night or/ on Sundays and holidays:  
Unless otherwise provided, none of the permanent works shall be carried out during night, Sundays or authorized holidays without the permission in writing. However, when work is unavoidable or necessary for the safety of life, property or works, the contractor shall take necessary action immediately and advise the Project Engineer accordingly.

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**2. Measurement and check measurement :**

- 2.1. Payment for the work done by the contractor will be made for the finished work based on the measurement recorded in measurement books by any officer of the Institute not lower in rank than a Assistant Engineer and check-measured by any officer not lower in rank than a Deputy Executive Engineer. The measurement shall be recorded at various stages of the work while in progress for the proper assessment of the quantities of work done and also after work is completed or when the contract is terminated. The contractor shall be present at the time of recording of each set of measurement and their check-measurement and accept them, then and there so as to avoid disputes at a later stage. If the contractor is not available at the work spot at the time of recording measurements or check-measurements the particulars of the measurements shall be signed by the authorized agent of contractor based on which the contractor shall accept the set of measurement without any further dispute. The contractor shall however note that the Institute cannot indefinitely wait for recording the measurement due to the absence of the contractor and his authorized agent and check measure them even in the absence of the contractor after giving in writing a notice of 3 days.
- 2.2. Measurements will be recorded for the finished work for which all tests are conducted in accordance to schedule 'D' and the work is done in accordance with schedule 'E' by using the materials, specified in schedule 'D'.

**3. PAYMENTS AND CERTIFICATES:**

- 3.1. Payments shall be adjusted for recovery of advance payments liquidated damages in terms of condition 13.7 of tender notice and security for the due fulfillment of the contract, payment will be made to the contractor under the certificate to be issued at reasonable frequent intervals by the Project Engineer, within fourteen days of the date of each certificate, and intermediate payment will be made of a sum equal to 92.5% and balance of 7.5% will be withheld and retained as a security for the due fulfillment of the contract. Under the certificate to be issued by the Project Engineer on the completion of the entire work the contractor will receive the final payment of all the moneys due or payable to him under or by virtue of the contract except earnest money deposit retained as security and a sum equal to 2.5% of the total value of the work done, provided there is no recovery from or forfeiture by the contractor to be made under liquidated damages and clause 60 of A.P.S.S. The amount withheld from the final bill will be retained under deposits and paid to the contractor together with the earnest money deposit retained as security after a period of twenty four months as all defects shall have been made good according to the true intent and meaning thereof.
- 3.2. No certificate of the Project Engineer shall be considered conclusive evidence as to the sufficiency of any work or materials or correctness of measurement to which it relates, nor shall it relieve the contractor from his liability to make good defects as provided by the contractor. 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, schedule "A" to the satisfaction of the Project Engineer to enable the Project Engineer or Dy.Executive Engineer to check the claim and issue the certificate. The certificate as to such of the claims mentioned in the application as are allowed by the Project Engineer shall be issued within fourteen days of the application. No, application for a certificate shall be made within fourteen days of previous application.
- 3.3. In case of over payment or wrong payment made if any to the contractor due to wrong interpretation of the provisions of the contract, APSS or otherwise, such unauthorized payment will be deducted in the subsequent bills or final bills for the work or from the bills under any other contracts with the Institute or at any time thereafter from the deposits available with Institute and the Government Department, where he has contracts, will be approached for recovery.
- 3.4. No claim shall be entertained if the same is not represented in writing to the Project Engineer within 15 days of its occurrence.
- 3.5. The contractor is not eligible for any compensation for inevitable delay in handing over the site in accordance with the condition 14 of tender notice. In such case suitable extensions of time will be granted after considering the merit of the case.
- 3.6. 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 in accordance with condition 13 of tender notice is delayed more than two months from the date of acceptance of the agreement by competent authority.

**3.7. INTEREST ON MONEY DUE TO THE CONTRACTOR :**

No omission by the Project Engineer to pay the amount due upon certificates shall vitiate or make void the contract, nor shall the contractor be entitled to interest upon any guarantee fund or payments in arrear, nor upon any balance which may, on the final settlement of his accounts, found to be due to him.

Whenever the withheld amount reaches 1,000 or a multiple thereof, the contractor may, at his option, deposit with Principal Rs. 1,000 or a multiple thereof, in any or the forms of interest bearing securities recognized for the purpose by the Andhra Pradesh Public Works Account Code and subject to the provisions therein contained, in which case in the equivalent with held amount shall be paid to him forth with. The contractor will be permitted to exercise the option in this clause, subject only to the condition that the rate of progress contained in the Articles of agreement is properly maintained.

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#### **4. CERTIFICATES OF COMPLETION OF WORKS:**

- 4.1.1. When the whole of the work has been completed and has satisfactorily passed any final test that may be prescribed by the contract, the contract may give a notice to that effect to the engineer accompanied by an undertaking to finish any outstanding work during the period of maintenance.

Such notice and undertaking shall be in writing and shall be deemed to be request by the contractor for the Project Engineer to issue a certificate of completion in respect of the work. The Project Engineer shall, within twenty one days of the date of delivery of such notice either issue to the contractor, with a copy to the Employer, A certificate of completion stating the date on which, in his opinion, the works were completed in accordance with the contract or give instructions in writing to the contractor specifying all the works which, in the Project Engineer's opinion, requires to be done by the contractor before the issue of such certificate. The Project Engineer shall also notify the contractor of any defects in the works affecting completion that may appear after such instructions and before completion of the works specified therein. The contractor shall be entitled to receive such certificate of the completion within twenty one days of completion to the satisfaction of the Project Engineer of the works so specified and making good any defects so notified.

- 4.2. Similarly, in accordance with the procedure set out in sub clause (1) of this clause, the contractor may request and the Project Engineer shall issue a certificate of completion in respect of (a) any section of the permanent works in respect of which a separate time for completion is provided in the contract, and(b) Any substantial part of the permanent works which has been both completed to the satisfaction of the Project Engineer and occupied or used by the Employer.

#### **5.0 Delays in commencement or progress or neglect of work and forfeiture of earnest money, security deposit and withheld amounts:**

If, at any time, the Project Engineer shall be of the opinion that the contractor is delaying commencement of the work or violating any of the provisions of the contract or is neglecting or delaying the progress of the work as defined by the tabular statement. "Rate of progress" in the Articles of Agreement, he shall so advise the contractors in writing and at the same time demand compliance in accordance with condition – 13.7 of Tender notice. If the contractor neglects to comply with such demand within seven days after receipt of such notice, it shall then, or at any time thereafter, be lawful for the Project Engineer to take suitable action in accordance with clause 60 of A.P.S.S.

#### **6.1 SUSPENSION OF THE WORKS BY THE CONTRACTOR :**

If the contractor shall suspend the works, or sublet the work in terms of clause 14 of Tender notice without sanction of the Project Engineer, or in the opinion of the Project Engineer shall neglect or fail to proceed with due diligence in the performance of his part of the contract as laid down in the schedule rate of progress, or if he shall continue to default or repeat such default in the respects mentioned in clause 27 of the APSS the Project Engineer shall take action in accordance with clause 61 of A.P.S.S.

- 6.2 If the contractor stops work for 28 days when no stoppage of work is shown on the current programme and the stoppage has not been authorised by the Project Engineer and not suitable for granting extension of time in accordance with clause 13.6 of Tender notice, the contractor will be terminated under clause 61 of A.P.S.S.

- 6.3 If the contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the tender notice under condition 13.7, the contract will be terminated under clause 61 of A.P.S.S.

- 6.4 The Project Engineer may terminate the contract for convenience.

#### **7.1 EXTRA ITEMS :**

Extra items of work shall not vitiate the contract. The contractor shall be bound to execute extra items of work as directed by the Project Engineer. The rates for extra items shall be worked out by the Project Engineer as per the conditions of the contract and the same are binding on the contractor.

- 7.2 The contractor shall be bound to execute the work of drilling and grouting for foundation stabilisation whenever necessary, though it is included or not included in the contract and contingent to the main work.

- 7.3 The contractor shall before the 15th day of each month, submit in writing to the Project Engineer a statement of extra items if any that he has to execute during the preceding month failing which the contractor shall not be entitled to claim any.

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**8 I.S.I. Books and APSS to be kept at site :**

A complete set of Indian Standard Specification referred to in “Technical specifications, and A.P.S.S. shall be kept at site for reference”

**9 Drawings to be kept at site:**

- a) One copy of the drawings furnished to the contractor shall be kept by the contractor on the site and same shall at all reasonable times be available for inspection and use by the Project Engineer and by any other person authorised by the Project Engineer in writing.
- b) Order Book: An order book shall be kept at the Office of the Engineer-in-Charge 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 Engineer in direct charge of the work and by the contractor or by his representative. In important cases, the Project 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 Project Engineer.
- c) Variations by way of modification, omissions or additions :
  - i) For all modification, omissions from or additions to the drawings and specifications, the Project Engineer will issue revised plans or written instructions or both and no modification, omission or addition shall be made unless so authorized and directed by the Project Engineer in writing.
  - ii) The Project Engineer shall have the privilege of ordering modifications, omission, or additions at any time before the completion of the work and such orders shall not operate to annul those portions of the specifications with which said changes do not conflict.
- d) Project Engineer’s Decision: It shall be accepted as in separable part of the contract that in matter regarding materials, workmanship, removal of improper work, interpretation of the contract drawings and contract specification, mode of the procedure and the carrying out of the work, the decision of the Project Engineer, which shall be given in writing shall be binding on the contractor.

**10. PLANT AND EQUIPMENT :**

The contractor shall have sufficient plant, equipment and labour and shall work such hours and shifts as may be necessary to maintain the progress on the work as per the approved progress schedule. The working and shifts hours shall comply with all Government regulations in force.

**11. STEEL FORMS :**

Steel forms should be used for all items involving and use of centering and shuttering. They shall be such that the concrete surface obtained after removal of the centering or shuttering shall be single plane without any dents and undulations.

**12. PERSONNEL OF THE CONTRACTOR :**

- 12.1 The contractor shall at all times, maintain on the work a staff of qualified Engineers and Supervisors of sufficient experience of similar other jobs to ensure that the quality of work turned out shall be as intended in these specifications and they shall be present at the work spot during working hours and at the time of inspection by the departmental officers. All orders and direction given to such supervisory or other staff of the contractor to be present on any specified inspection and the contractor shall comply with such instructions.
- 12.2 The contractor shall supply to the Project Engineer details of name, qualifications and experience in regard to all supervisory staff employed by the contractor and notify the changes when made and satisfy the Project Engineer regarding the quality and adequacy of staff thus employed.
- 12.3. The Project Engineer will have the unquestionable right to ask for change in the quantity and the number of the contractor’s supervisory staff and to order removal from the work of such staff. The contractor shall comply with such order and effect replacement to the satisfaction of the Project Engineer.
- 12.4. The contractor shall not without written authorization, permit entry on site of work of any person authorized agents, engaged on hand in connection with work.
- 12.5. All vehicles used by the contractor shall be clearly marked with contractor’s name.

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### **13. SECURITY MEASURES :**

- 13.1 The contractor shall be responsible for the security of the work for the duration of the contract and shall provide and maintain continuously adequate security personnel to fulfill these obligations. The requirements of security measures shall include but not limited to maintenance of order on the site, provision of all lighting, fencing, guard, flagmen, and all other measures necessary for the protection of the works within the colonies, campus and elsewhere on the site, all materials delivered to the site, all persons employed in connection with the works continuously throughout working and non-working period including nights, Sundays and holidays for duration of the contract.
- 13.2 Other contractors working on the site concurrently with the contractor will provide security for their own plant and materials. However, their security provisions shall in no way relieve the contractor of his responsibilities in this respect.
- 13.3 Separate payment for provision of security services will not be made and the cost of this work shall be deemed to have been included in the unit rates and prices included in the contract.

### **14 LIABILITIES OF THE CONTRACTOR:**

#### **14.1 Accident relief and workmen compensation :**

The contractor should make all necessary arrangements for the safety of workmen on the occurrence of the accident, which results in the injury or death of any of the workmen employed by the contractor. The contractor shall within 24 hours of the happening of the accident and such accidents should intimate in writing to the concerned Asst. Engineer /Dy. Executive Engineer of the Institute the act of such accident, the contractor shall indemnify Institute against all loss or damage sustained by the Institute resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines if any payable by Institute as a consequence of Institute failure to give notice under workmen's compensation Act or otherwise conform to the provisions of the said Act. In regard to such accident.

- 14.2 In the event of an accident in respect of which compensation may become payable under the workmen's compensation Act VIII 23 whether by the contractor, by the Institute, it shall be lawful for the Project Engineer to retain such sum of money which may in the opinion of the Project Engineer be sufficient to meet such liability. The opinion of the Project Engineer shall be final in regard to all matters arising under this clause.
- 14.3 The contractor shall at all times indemnify the Institute against all claims which may be made under the workmen's compensation act or any statutory modification thereafter or rules there under or otherwise consequent of any damage of compensation payable in consequent of any accident or injuries sustained or death of any workmen engaged in the performance of the business relating to the contractor.

### **15 CONTRACTOR'S RISKS:**

- 15.1 All risks of loss or damage to physical property and of personnel injury and death which arise during and in consequence of the performance of the contract other than the expected risks are the responsibility of the contractor.

The contractor shall provide in the joint names of the Employer and the contractor insurance cover from the start date and up to the end of the defects liability period i.e. 24 months for the following events which are due to the contractor's risks.

- a) Loss of or damage to the works, plant and materials.
  - b) Loss of or damage to the equipment.
  - c) Loss of damage of property (except the works plant, materials and equipment) in connection with the contract and
  - d) Personnel injury or death.
- 15.2 Policies and certificates for insurance shall be delivered by the contractor to the Project Engineer for approval before the start date. All such insurance shall provide for compensation to be payable in the proportions of currencies required to rectify the loss of damage incurred.
- 15.3 If the contractor does not provide any of the policies and certificates required, the employer may effect the insurance which the contractor should have provided and recover the premiums the Principal had paid from payments otherwise due to the contractor or, if no payment is due, the payment of the premiums shall be debt due.
- 15.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Engineer.
- 15.5 Both parties shall comply with any conditions of the insurance policies.

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**16 USE OF SITE :**

The contractor may be permitted to avail the site at a nominal value of Rs. 1/- (Rupee One only) per acre or part thereof per month on lease for use by him in carrying out the contractor work and when Project Engineer may consider such use to be necessary for the bonafide purpose of executing works. The contractor shall commence any operation on such lands with the prior approval of the Project Engineer.

**17 ECOLOGY:**

17.1 The contractor shall preserve all existing vegetations such as trees on adjacent to the site which do not interfere with construction as determined by the Project Engineer. The contractor shall take all possible precautions to avoid and unnecessary damage to vegetation, structures and any other Institute property nearby and to trees not to be felled and to structures under construction, to the workmen and shall be responsible for any damage if it occur in such operations. All produce from the cutting of trees etc., shall be the property of the Institute and shall be stacked and placed at the place specified by Project Engineer. No claim shall be made for such cutting and stacking trees etc., by the contractor. If any produce from such cutting is not handed over to the Institute by the contractor, he shall be charged for the same at the rates to be decided by the Principal. The recovery of this amount shall be made in full from the intermediate bill that follows.

17.2 The contractor shall not unnecessarily or for use of fuel cut any trees. Brushwood grass or other vegetations nor shall set fire thereto without the written permission of the Project Engineer. When such permission has been given, the contractor shall take necessary measures to prevent damage and to prevention of fire spreading to surrounding property and shall be responsible to any such damage if caused.

**18 CLEARING OF THE SITE AND REHANDING OVER:**

18.1 Institute land as may be considered necessary by the Project Engineer for the execution of the work will be given to the contractor and shall be handed over to the department in good condition and to the complete satisfaction of the Project Engineer.

18.2 All areas of operations including those for his staff and labour colonies handed over to the contractor shall be cleared and handed back to the Project Engineer. The contractor shall make good to the satisfaction of the Project Engineer all damages or alterations made to the area while handing over back of other property or land handed over to him for purpose of the works. Temporary structures may be erected by the contractor, such as storage sheds office, residence etc., for non-commercial use in the land handed over to him at his expenses and with the permission of the Project Engineer. At the completion of work, the structures should be dismantled at the site cleared and handed over to the Institute.

**19 POSSESSION PRIOR TO COMPLETION :**

The Project Engineer shall have the right to take possession of or use any completed part of work or works or any part thereof under construction either temporarily or permanently. Such possession or use shall not be deemed as an acceptance of any work either completed or not completed in accordance with the contract, within the intent of clause-28 of APSS except where expressly otherwise specified by the Project Engineer.

**20 ACCESS TO THE CONTRACTOR'S BOOKS:**

Wherever, it is considered necessary by the Project Engineer to ascertain the actual cost of execution of any particular extra item of work or supply of the plant or materials on which advance is to be made or of extra items or claims, he shall direct the contractor to produce the relevant documents such as pay rolls, records of personnel, invoices of materials and any or all data relevant to the item or necessary to determine its cost etc., and the contractor shall, when so required, furnish all information pertaining to the aforesaid items, in the mode and manner that may be specified by the Project Engineer.

**21 POWER SUPPLY:**

- 21.1 The power supply will made available to the work on request of the contractor and the current consumption charges will be recovered from the bills of the contractor at the H.T. supply rates. The Institute does not take any responsibility, if there is any breakdown and interruption of the supply.
- 21.2 The contractor shall satisfy all the conditions of rules required as per Indian Electricity Act 1910 and under Rule 45(I) of the Indian Electricity Rules, 1956 as amended from time to time and other pertinent rules.
- 21.3 The power shall be used for bonafide Institute works only.

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**22 PRIORITY:**

The contractor should make his own arrangement for obtaining the priority certificate, in respect of items required in connection with the execution of the work. The Institute will render necessary assistance in this regard.

**22 FIRE FIGHTING MEASURES:**

- 22.1 The contractor shall provide and maintain adequate fire fighting equipment and take adequate fire precaution measures for the safety of all personnel and temporary and permanent works and shall take action to prevent damage due to destruction by fire of trees, shrubs and grasses.
- 22.2 Separate payment will be made for the provision of fire prevention measures and all cost of such work shall be deemed to have been included in unit rates and prices included in the contract.

**23 APPROACH ROADS AND ROADS IN WORK AREA:**

- 22.2.1 In addition to existing public roads and roads constructed by the Institute if any, in work area all additional approach roads and roads inside the work area and camp required by the contractor shall be constructed and maintained by him at his own cost.
- 22.3 It is possible that work at, or in the vicinity of the work site will be performed by Institute or by other contractors engaged in work for the Institute during the contract period. The contractor shall without charge permit the Institute and such other contractor and other workmen to use the access facilities including roads any other facilities, constructed and acquired by the contractor for use in the performance of the works.
- 22.4 The contractor's heavy construction traffic of tracked equipment shall not traverse any public roads or bridges unless the contractor has made arrangement with the authority concerned. In case contractor's heavy construction traffic or tracked equipment is not allowed to traverse any public roads or bridges and the contractor is required to make some alternative arrangements, no claim on this account shall be entertained.
- 22.5 The contractor is cautioned to take necessary precautions in transportation of construction materials to avoid accidents.

**23 RAMPS:**

Ramps required during execution may be formed wherever necessary and same are to be removed after completion of the work. No separate payment will be made for this purpose.

**24 COMPLIANCE WITH THE ENFORCEABLE LAWS:**

- a) The contractor shall, at all times during the continuance of the contract, comply fully with all existing Acts, regulations and bylaws including all statutory amendments and re enactment of state or central government and other local authorities and any other enactment, notification and acts that may be passed in future either by the state or the central government or local authority, including Indian workmen's compensation act, 1923. Contract labour (Regulation and Abolition) Act 1970. The child labour prohibition and regulation act 1986 and equal remuneration act 1976, factories act., minimum wages act 1948, provident fund regulation, employees provident fund act 1952, schemes made under the same act, the buildings and other construction workers (Regulations of employment and condition of service) Act 1996, the cess act 1996 and also applicable labour regulations, health and sanitary arrangement for workmen, insurance and other benefit and shall keep Institute indemnified in case any action is commenced by competent authorities for contravention by the contractor.
- b) If the Institute is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated henceforth on the part of the contractor, the Project Engineer shall have the right to deduct from any monies due to the contractor, his amount of performance security or recover from the contractor personally any sum required or estimated to be required for making good the loss or damage suffered by the Institute, responsibility in connection with the employees of the contractor, who shall, in no case, be treated as the employees of the department at any point of time.

**25 HEALTH AND SANITARY :**

Medical rules for the provision of health and sanitary arrangements for worker employed by the departments and contractors.

The camp and hutting accommodation water supply and sanitary arrangements for the workers and labour employed on the works shall be made by the contractor at his own cost and shall strictly conform to the requirements and to the satisfaction of the Medical and sanitary authorities of project and in accordance with the medical rules listed below:

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- i) The contractor's special attention is invited to clauses 37, 38, 39, 50 and 51 of preliminary specifications to the APSS and he is requested to provide at his own expenses the following amenities to the satisfaction of the Project Engineer.
- ii) First Aid: At the work site there shall be maintained in a readily accessible place first aid appliances and medicines including an adequate supply of sterilized dressings 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.
- iii) Drinking water: water of good quality fit for drinking purpose shall be provided for the working people on a scale of not less than 3 gallons per day.

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.

Every water supply storage shall be at a distance of not less than 15m from any latrine drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or 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.

A reliable pump shall be fitted to each covered well and the trap door shall be kept closed and open only for cleaning or inspection which shall be done at least once in a month.

Washing and bathing places: Adequate washing and bathing place shall be provided separately for men and women such places shall be kept in clean and drained conditions, bathing or washing should not be allowed in or near any drinking water well.

Latrines and urinals: These shall be provided with in the premises of every work place, latrines and urinals in an accessible place and accommodation separately for each of them shall be on the following scale or as directed by the Project Engineer in any particular case.

	<u>Seats</u>
1. Where the number of persons employed does not exceed 50	2
2. Where the number of persons employed exceeds 50 but not 100	3
3. 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 cleaned atleast four times daily. The excreta from the latrines shall be disposed off at the contractor's expense in out of way pits approved by the local public health authority. The contractor shall also employ adequate number of scavengers and conserves staff to keep the latrines and urinals in a clean condition which shall be cleaned atleast four times daily.

Rest shelters: At the work site these shall be provided free of cost. Two suitable sheds one for meals and the other for the use of labour shall be provided.

Creches: 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 for important games and play and other as their bed rooms. The huts shall not be constructed on a lower standards than the following.

1. Thatched roof.
2. Mud floor and walls.
3. Planks spread over the mud floor and covered with matting. The use of the huts shall be restricted to children, their attendants and mothers of the children.

Canteens: A cooked food canteen on a moderate scale shall be provided for the benefit of workers, if it is considered essential.

Sheds for workmen : The contractor shall provide at his own expense sheds for housing the workmen. The shed shall be on a standard not less than cheap shelter type to live in which the work people in the locality are accustomed to a floor area of about 2m x 1.5m per two persons shall be provided. The sheds are to be in rows with 12.5m clear space between sheds and 19m clear space between rows if conditions permit. The work people's camp shall be laid in units of 400 persons each unit to have a clear space of 12m all round.

Land should be acquired temporarily for storing contractor's materials or for his staff. The contractor should make his own arrangements for temporary acquisition of land required for storing his materials and for housing of his staff at his expenses.

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**26 LABOUR CAMP AND CONTRACTOR'S STAFF COLONY:**

The Project Engineer will handover the site for the contractor and his labour. All areas of operation including those for his staff and labour and colonies handover to the contractor shall be cleared and handed back as soon as his contract for the work is over. The contractor at the time of handing over back shall made good to the satisfaction of the Project Engineer any damage or alteration made to the areas or other property or land handed over to him for the purpose of the project work. Temporary structures may be erected by the contractor for storage sheds, offices, residences etc., for non commercial use, with the permission of the Project Engineer on the land handed over to him at his own cost. At the completion of the work these structures shall be dismantled site cleared and handed over to the Project Engineer. The land required for providing amenities will be given free of cost from Institute lands if available otherwise the contractor shall have to make his own arrangements. Labour importation and amenities to labour and contractor's staff shall be to the contractor's account. His quoted rates shall include the expenditure towards importation of labour amenities to labour and staff.

**27 TRANSPORTATION OF LABOUR:**

The contractor shall make his own arrangements for the daily transportation of the labour and staff from labour camps and staff colonies to the work spot and no labour or staff of the contractor shall stay at the work spot. No extra payment will be made to the contractor as the work shall include the transportation charges of labour from colonies to work spot and back.

The contractor will at all times duly observe the provisions of employment of children act XXVI of 1938 and any enactment or modification of the same and will not employ or permit any person to do any work for the purpose under the provisions of this agreement in contravention of said act. The contractor hereby agrees to indemnify the Institute from and against all claims, penalties which may be suffered by the Institute or any person employed by the department by any default on the part of the contractor in the observance and performance of the provisions of the employment of children act XXVI of 1938 or any enactment or modification of the same.

As per Government memo No. 721/Gr.(1)/81-35, dt. 17.11.87, the contractor shall obtain the insurance at his own cost to cover the risk on the works to labour engaged by him during period of execution against fire and other usual risks and produce the same to the Project Engineer concerned before commencement of work.

**28 SAFETY MEASURES:**

1. The contractor shall take necessary precautions for safety of the workers and preserving their health while working in such jobs which require special protection and precautions. The following are some of the measures listed but they are not exhaustive and contractor shall add to and augment these precautions on his own initiative where necessary and shall comply with directions issued by the Project Engineer or on his behalf from time to time and at all times.
2. Providing protective foot wear to workers in situations like mixing and placing or mortar or concrete sand in quarries and places where the work is done under much wet conditions.
3. Providing protective head wear to workers at places like under ground excavations to protect them against rock falls.
4. Providing masks to workers at granulators or at other locations where too much fine dust is floating about and sprinkling water at frequent intervals by water houses on all stone crushing area and storage bins to abate the dust.
5. Getting the workers in such jobs periodically examined for chest trouble due to too much breathing in fine dust.
6. Taking such normal precautions like fencing and lightening in excavation of trenches, not allowing rolls or metal parts of useless timber spread around making danger areas for blasting providing whistles etc.
7. Supply work men with proper belts, ropes etc., when working in precarious slopes etc.
8. Avoiding naked electrical wire etc., as they would electrocute the works.
9. Taking necessary steps towards training the workers concerned on the machinery before they are allowed to handle them independently and taking all necessary precautions in and around the areas where machines, hoists and similar units are working.

**29) FAIR WAGE CLAUSE:**

1. The contractor shall pay not less than fair wages to labourers engaged by him on the work.
2. "Fair" wages means wages whether for time or piece work notified by him on the work.
3. The contractor shall, not with-standing the revisions of any contract to the contrary cause to be paid to the labour, in directly engaged on the work including any labour engaged by the sub-contractor in connection with the said work, as if the labourers had been directly employed by him.

**CONTRACTOR****PROJECT ENGINEER**

- 4. In respect of labour directly or indirectly employed in the works for the purpose of the contractors part of the agreement the contractor shall comply with the rules and regulations on the maintenance of suitable records prescribed for this purpose from time to time by the Institute. He shall maintain his accounts and vouchers on the payment of wages to the labourers to the satisfaction of the Project Engineer.
- 5. The Project Engineer shall have the right to call for such record as required to satisfy himself on the payment of fair wages to the labourers and shall have the right to deduct from the contract amount a suitable amount for making good the loss suffered by the worker or workers by reason of the 'fair wages' clause to the workers.
- 6. The contractor shall be primarily liable for all payments to be made and for the observance of the regulations framed by the Government from time to time without prejudice to his right to claim indemnity from his sub-contractors.
- 7. As per contract labour (Regulation and abolition) Act 1970 the contractor has to produce the license obtained from the licensing officers of the labour department along with the tender or at the time of agreement.
- 8. Any violation of the conditions above shall be deemed to be a breach of his contract.
- 9. Equal wages are to be paid for both men and women if the nature of work is same and similar.
- 10. The contractor shall arrange for the recruitment of skilled and unskilled labour local and imported to the extent necessary to complete the work within the agreed period as directed by the Project Engineer in writing.

**30 NDEMUNITY BOND:**

Name of work :

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I.....Contractor,.....

S/o.....Aged.....Resident of

.....

.do hereby bind myself to pay all the claims may come (a) under workmen's compensation Act, 1933 with any statutory modification there of and rules there under or other wise for or in respect of any damage or compensation payable in connection with any accident or injury sustained (b) under minimum wages act, 1948 (c) under payment of wages act 1936 (d) under the contractor labour (Regulation and Abolition) Act 1970 by workmen engaged for the performance of the business relating to the above contract i.e.,

Failing such payment of claims of workmen engaged in the above work, I abide in accepting for the recovery of such claims, effected from of my assets with the Institute.

**CONTRACTOR**

**PROJECT ENGINEER**