



**GOVERNMENT OF TAMILNADU
TECHNICAL EDUCATION DEPARTMENT**

TECHNICAL EDUCATION CIRCLE, CHENNAI - 25

**NAME OF WORK : Special maintenance and Repairs in
Science Block, Arts Block, Road,
Compound wall and other repair works
in Government Arts College,
Nandanam, Chennai 35**

Date of Tender : 05.04.2022

EMD : Rs.84500/-

Contractor

**Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25**

ANNEXURE. IPARTICULARS TO BE FURNISHED BY TENDERERS

1. Name of Tenderer :
2. Name of work :
3. Date of Tender :
4. Total value of Tender : Rs.
5. Details about E.M.D. Enclosed for the tender and its validity Including the Goods and Services Tax (GST) Amount :
6. Registered class of the tenderer with monetary limit and department in which registered (certified copy of the Registration should be attached. }
7. Recent works executed (Details about the name and place of work, value of the works, etc., should be furnished.) }
8. Works under execution (Details about the name and place of work, value of the works, etc., should be furnished.)
9. Command of labour in brief :
10. Turnover of previous years (particulars for a period of three consecutive years to be furnished) }
- 11.. Whether Income Tax clearance certificate is enclosed; if not, when it will be produced. }
12. Whether GST clearance certificate is enclosed. If not when will it be produced ? }
- Technical Assistant Details :
13. Name :
Qualification certificate :
Experience :
(OR) :
3. Name :
If retired Civil Engineer Designation and date of retirement. (Copy enclosed)
4. If any other particulars :

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

**ADDITIONAL GENERAL CONDITIONS (i.e.) IN ADDITION TO GENERAL CONDITIONS TO
CONTRACT APPENDED WITH T.N.B.P.**

1. POSTAL TENDERS :

- 1.1) The contractor may have the option to present the tender directly or to send registered post acknowledgement due; on or before the last date for receipt of tenders.
- 1.2) In case of sending tenders by registered post acknowledgement due it is the responsibility of the tender himself to despatch the tender sufficiently early so as to reach the tender opening authority before the date and time notified in the tender notice for opening of tenders.
- 1.3) No representation appeal of any kind will be allowed against belated receipt of tenders by post beyond the notified date and time or loss in transit etc.

2. E.M.D

Demand Draft issued by nationalized (or) scheduled bank drawn in favour of the Executive Engineer PWD ,Technical Education Division concerned of this circle.

The acceptance of EMD in various approved forms duly pledge in favour of the Executive Engineer concerned is subject to the specific condition that the successful tenderer should pay the Security Deposit (including E.M.D) in the form of small savings scripts\ deposits\Accounts in lieu of other mode of payment for E.M.D. If offering Indravikas patras, the Contractor should note his name in the back side of the said patras and to furnish a letter stating that he is submitting the Indra vikas patras of such Indira Vikas Patras will only be taken for calculation.

3. SECURITY DEPOSIT :

In case of contracts for Buildings works the Security Deposit (i.e., 2% of the value of contract minus the E.M.D. already remitted) will be collected at one time only. equivalent to 2% of the contract value including GST Amount)

The Security Deposit can be paid to the contractor asking them to invest the amount so paid in small savings scripts and to hand over to the Executive Engineer concerned by pledging them in his favor, subject to the condition that unless the contractor remit the security deposit in small savings scripts (which will be returned after observing the rules in force), their further bill to the work carried out by them will not be paid.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Additional security deposit will have to paid by successful tenderer if called for,

Irrevocable bank guaranty in the prescribed form shall be accepted towards security deposit retention

money also (G.O.Ms.No.283/PW(G2)Dept./Dt.21.05.99).

4. RATES & PRICE :

The Tenderer shall quote the rates and prices (**both in figures, words and amount**) for all the items of the Works described in the Bill of Quantities **excluding GST** along with sum of the quoted tender value **excluding GST** at the end (**both in figures, words and amount**).

5. WITHHELD AMOUNT :

The withheld amount at 5% percent be recovered from each bill based on the value of work done.

6. CLAIMS OF CONTRACTORS ON ACCOUNT OF LOSSES DUE TO UNPRECEDENTED FLOODS AND OTHER ACTS OF GOD :

The work executed by the contractor under this contract shall be maintained at the contractor's risk until the work is taken over by the Executive Engineer. The Government shall not be liable to pay for, any loss of damages occasioned by or arising out of fire, flood, volcanic eruption, earth quakes, other convulsions of nature and all other natural calamities, risks arising out of acts of God during such period and that the option whether to take insurance coverage or not to cover such risks is left to the contractor.

7. STANDARD SPECIFICATIONS :

For detailed description of various items of work to be executed in addition to the brief description given in the schedule and for the rights and obligations of the Contractors etc, the attention of the contractors is invited to Tamil Nadu Building practice which should be followed in all respects both in letter and spirit. The materials used, the workmanship, the mode of execution of the work etc., should conform to relevant specification of TNBP or Indian Standard Specifications as may be specified.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

8. SAFETY CODE :

The safety measures and all amenities for the labours shall be made by the Contractor at his cost as indicated in the safety code vide appendix to General Conditions to Contract and clause 34,35 and 42.1 to 42.6 of General Conditions to Contract.

9. RETENTION OF 2½% FOR ONE YEAR :

In case of contract for construction of building either permanent or semi Permanent buildings, a sum equivalent to 2½ % of the value of work done will retained with the Government for a period of one year reckoned from the date of completion of the work in order to enable the departmental officers to watch the effect of all seasons on the work done by the contractor. The amount so retained with the Government will be refunded, only on expiry of one-year period referred to above and on execution of indemnity bond by the contractor for further period of four years.

The contractor shall be liable to set right all defect arising out his faulty Execution of sub standard work notice during the above five years period at his cost **(G.O.Ms.No.283/PW(G2) Dept. / Dt.21.05.99).**

In addition to the aforesaid security deposit, retention amount shall be deducted from the running account bills, a sum equivalent to 5% (Five Percent) of the total value (including the Goods and Services Tax (GST) Amount for all the running account bill) of each bill as retention money Out of the 5% retention amount, 2½ % (Two and half Percent) of the total value of the work so far executed will be released to the contractor on payment of final bill, and in the final bill, the Goods and Services Tax (GST) amount retained in previous payment has to be released to the contractor without interest .

And the balance 2½% will be retained for a period of --- year reckoned from the date of completion of the work, as all defects shall have been made good according to the true intent and meaning hereof, whichever shall happen last

The retention money of 2½% including GST (Two and a Half Percent) of the total value of contract after deducting any amount due to the Department, shall be refunded to the Bidder without interest after the defects liabilities attached to the contract is over.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

SPECIAL INSTRUCTIONS TO THE TENDERERS

Part – I

1. The tenderer should fill up the Annexure to the Tender schedule furnishing there to the required information.
2. The tenderers should furnish the particulars of name, address and technical qualification of the Technical Assistant proposed to be employed by them to look after the execution of this work as per terms and conditions of the contract.
3. All pages of the tender should be signed by the tenderer and corrections in rates should be duly attested by them.
4. A copy of the tenderers registration in P.W.D., as a contractor shall be attached with the tender.
5. Current Income Tax Clearance Certificate shall be enclosed with the tender or the tender on which the Income Tax Clearance Certificate for the current year was submitted to this office should be specified.
6. The following particulars shall also be furnished by the contractor along with the tenders.
 - a. A list of details of works executed by the contractors with their value.
 - b. A list of details of works under execution by the contract with their values.
 - c. The applicant should furnish the details of major building works and other civil Works Completed during the past "FIVE" years.

Part-II

1. The tenders should carefully go through the tender schedule and quote their rates for all times.
2. The rates/percentage should be filled in neatly in figures and in words and taking into account the metric units specified in the tender, scribbling, over writings and erasing should be avoided as far as possible.
3. The amount of each item of work should be worked out. Proper care must be taken in working out the amount of each item of work taking into account the unit for which the rates quoted and the quantity of work to be done under the item.
4. The total for each page should be arrived at and carried over to every page and the grand total value of work should be worked out and shown at the end.
5. The tender should be submitted along with the covering letter giving full details as called for in the tender notice and with particulars of following items.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

- a. Whether they are registered contractors if registered together with the copy or letter registering them in the appropriate class.
- b. Details of the earned Money Deposit remitted such as small savings Scripts, D.D., in which the earnest Money Deposit was paid.

In case the tenderers are eligible for concessional Earnest Money Deposit and accordingly they have tendered their No. and details from which the concession was granted to them to be specified and if possible a copy of this aforesaid reference may be enclosed along with the tender for ready reference.

- c. Details of previous work done by the tenderers covering the cost of work the agreement No and date, the Department in which the work was carried out etc., so as to assess the previous experience of the tenderers at once as also make an easy for reference to their record of every year details should be furnished so as to see that the tenderers have minimum experience of major buildings.
 - d. List of various machinery and other equipments at the tenderer disposal for use in the execution of the work.
 - e. The tender form should be filled in while submitting the tender. The tenders submitted without filling up the tender form is liable to be rejected.
 - f. The certificates showing the annual turn over of the Contractor for the last one year issued by the respective bank shall be attached.
6. The tenders must be submitted in a foolscap cover thereby duly signing all the conditions, Plans and schedule issued as tender documents.

7. POSTAL TENDER.

- a) The Contractors may have the option to present the tender directly or to send it by Registered Post with acknowledgement due on or before the last date for receipt of tenders i.e. **05.04.2022** Up to 15.00 Hours.
- b) i) In case of sending tenders by registered post with acknowledgement due, it is the responsibility of the tenderer himself to dispatch the tender sufficiently early so as to reach the tender opening authority before the date notified in the Tender Notice for opening of tenders.
- ii) The tender registered in the post office after the due date will not be considered.
- c) No representation, appeal of any kind will be allowed against belated receipt of tender by post beyond the notified date or loss in transit etc.,
- d) Tenders offered in person before the last due date, postal tenders received will be opened in a consolidated manner as usual on the notified date for opening of tenders.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Add New Conditions for Goods and Services Tax (GST)

The Government of India has notified vide Notification No. 20 / 2017 – Central Tax (Rate), dated 22nd August, 2017 and Notification 21 No.24 / 2017 – Central Tax (Rate), dated 21st September, 2017, the concessional rate of the Goods and Services Tax (GST) at 12% [CGST at 6% + SGST at 6%] is livable for any Government Contract, whether Civil or Electrical, irrespective of the Goods and Services Tax (GST) rate applicable on purchase of goods used in the execution of Government Contract.

And the GST amount will be calculated at 12% from the sum of total tendered value quoted by the tenderer for construction cost (excluding GST) specified in the BOQ, Subject to GST rate applicable from time to time as recommended by the GST Council
 “All duties, taxes, and other levies except GST, payable by the contractor under the contract, or for any other cause shall be included in the rates, prices and total Bid Price submitted by the Bidder”

INPUT TAX CREDIT (ITC)

a) As per Notification 202, dated 29.06.2017 and as per sub-section (2) of Section 7 of the Tamil Nadu Goods and Services Act, 2017, (Tamil Nadu Act 19 of 2017), activities or transactions undertaken by State Government shall be treated neither as supply of goods nor a supply of service.

b) As per Chapter IX (Section 41) of the Tamil Nadu Goods and Services Act, 2017, every registered persons may be entitled to take the credit of eligible input tax, as self-assessed, in his return and such amount shall be credited on a provisional basis to his electronic credit ledger.

c) As per PWD SOR (2019-20), dated 17.06.2019, under General Note, 8 (ix), the Contractor is eligible to get refund of excess tax paid over or liable to pay tax for this Contract Work.

TOTAL TENDER PRICE

1. The total tender price will be the cumulative of value quoted for construction (Total Basic Rate + GST),

The amount of EMD is fixed at 1% of the contract value of work put to tender (including the GST Amount)”

NEGOTIATIONS

The lowest tenderer will be identified who quotes lowest total tender price which including GST as per the clause Negotiation of rates will be made only with the lowest tenderer for reducing the quoted rates and the negotiation will be made for the rates quoted to the items in the construction part alone and not for GST amount.”

Contractor

Sd/-
 Chief Engineer, P.W.D.,
 Technical Education Circle,
 Chennai - 25

"After negotiation with lowest tenderer, the GST amount will be recalculated at 12% of the sum of the Negotiated tender value (excluding GST) for construction Cost specified in the BOQ, subject to GST rate applicable from time to time as recommended by the GST Council

AWARD OF CONTRACT

To be substantially responsive to the bidding documents and who has offered the lowest evaluated total tender price (Total Quoted Value including the Goods and Services Tax (GST) Amount).

MINIMUM CRITERIA FOR QUALIFICATION

The Applicant should produce Income Tax Clearance Certificate valid for the current period, „VAT“ Verification Certificate (i.e. previous assessment year) and „TIN“ number having validity and copy of Goods and Services Tax (GST) Registration No

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

TENDER FOR

dated

From

To

The Chief Engineer PWD
 Technical Education Circle,
 Chennai – 25.

Sir,

I/wedo hereby tender and if this tender be accepted undertake to execute the following work viz.

as shown in the drawings and described in the specifications deposited in the office of the Chief Engineer PWD, Technical Education Circle, Chennai with such variation by way of alterations (or) additions in and omission from the said works and method of payment as are provided for in the "Conditions of contract for the sum of Rupees(to be entered in words and figures.)

Or such other sum as may be arrived at under the clause of the Standard Preliminary Specifications relating to payment on lump sum basis or by final measurements at unit prices".

1. I/we have also completed the priced list of items in schedule "A" annexed (in words and figures) for which I/we agree to execute the work and receive payment on measured quantities as per the general conditions to the contract.

2. I/We do 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 Tamilnadu Building Practice and the general conditions to the contract there in and the Tamilnadu Building Practice Addenda Volume;

3. I/We have made such examination of the contract documents and of the plans, specifications, 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 materials required to be furnished as to enable me/us to thoroughly understand the intention of the same and the requirement, Covenants, 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 Government based upon or arising out of any alleged misunderstanding or misconception or mistake on my/our part of the said requirements, covenants, stipulations restrictions and conditions.

Contractor

Sd/-
 Chief Engineer, P.W.D.,
 Technical Education Circle,
 Chennai - 25

4. I/We being a registered Public Works Department contractor enclose an income Tax verification certificate have already produced an Income Tax verification certificate during the current calendar year in respect of (here particulars of the previous occasions on which the certificate was produced should be given). The legal address of the contractor for service of all letters and notices will be as follows:

5. (i) (a) I / We enclose herewith a challan for the payment of the sum of Rupeesas Earnest Money not to bear interest (to be entered in words and figures).

5. (i) (b) I / We have paid Rs. (Rupees only as against the E.M.D. of Rs. (Rupees only) Since I am/we are and eligible to pay the E.M.D., at concessional rates.

5. (i) (c) in lieu of cash deposits, I / We have enclosed a bearing No. Dated issued by for a value of Rs. (Rupees only) drawn/endorsed/pledged in favour of the Executive Engineer, P.W.D., Technical Education division, **Chennai**.

5. (i) (d) I am /We are and hence exempted from payment of E.M.D.

6. If my / our Tender is not accepted, this sum shall be returned to me / us on my / our applications when intimation is sent to me/us for rejection or at the expiration of ninety days from the date of this tender, whichever, is earlier. If my/our tender is accepted, the Earnest Money Deposit shall be retained by the Government as security for the due fulfillment of the contract. If upon intimation being given to me/us by the authority authorized by the Governor under Article 299 (i) of the constitution (hereinafter called the accepting authority) of acceptance of my/our tender and if I /we fail to make the additional security deposit, or to enter into required agreement (as specified in class IV of the tender notice) then I/We agree to the forfeiture of the Earnest Money Deposit. Any notice required to be served on me/us hereunder shall be sufficient served on me/us if delivered to me / us personally or forwarded, to me/us by post to (Registered or ordinary) or left at the mail 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.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

7. I/We fully understand that on receipt of communication of acceptance of tender, from the accepting authority there emerges a valid contract between me/us and the Governor of Tamilnadu and the tender documents i.e., tender notice, tender with schedules. General conditions to the contract and special conditions of the tender, negotiation letter, communication of acceptance to tender, shall constitute the contract for this purpose and be the foundation of rights of both the parties, as defined in clauses (iv) of tender notice, provided that, it shall be open to the accepting, authority to insist on execution of any written agreement by tenderer, if administratively considered necessary or expedient.

8. I/We have also signed the copy of the Tamilnadu Building Practice and National Building Code and Addenda volume thereto, maintained in the office of the Chief Engineer PWD, Technical Education Circle, Chennai in acknowledgement of being bound by all conditions of the clauses of the General conditions to the contract and all specifications for items of work described by a specification number in Schedule "A".

9. In consideration of the payment of the said sum of Rupeesor such other sum as may be arrived at under the clause of the General conditions to the contract relating to payment of lump sum basis or by final measurement at unit prices I/We agree, subject to said conditions to execute and complete the works shown upon the said drawing serially from Number 1 to inclusive Schedule (B) and described in the specifications Schedule (C) and to the extent of the probable quantities shown in the Schedule (A) with such variations by way of alteration or additions to or deductions from the said work and method of payment therefore as are provided for in the said conditions.

10. The term "Executive Engineer" in the said conditions shall mean the Public Works officers in charge of the Divisions having jurisdiction for the time being over the work, who shall be competent to exercise, all the powers and privileges reserved herein in favour of the Government with the previous sanction of or subject to ratification by the competent authorities in case where such sanction or ratification may be necessary and who has been duly authorized under Article 299(1) of the constitution.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

11. I / We agree that the time shall be considered as the essence of this contract and to commence the work, as soon as this contract is accepted by the competent authority as defined by the Tamilnadu Public Work Department Code and the site (or premises) is handed over to me/us as provided for in the said conditions and agree to complete the work within **3 (Three)** months from the date of such handing over of the site (or premises) and to show progress as defined in the tabular statement "Rate of progress" subject nevertheless to the provision for extension of time contained in clause 56 of the General conditions to the contract appended to Tamilnadu building practice.

12. I /We agree that upon the terms and conditions of this contract, being fulfilled and performed to the satisfaction of Executive Engineer, the Security deposited by me/us as herein before cited or such portion thereof, as I/We may be entitled to, under the said conditions be paid back to me/us as provided in clause 64 of the General conditions to the contract.

13. I am/We are professionally qualified and my/our qualifications are as follows:

I/We in pursuance of clause 18 of tender notice under take to 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 may require (e.g) reinforced cement concrete works.

Sl.No.	Name of technical staff proposed to be employed	Qualification and experience
1.		
2.		
3.		
4.		

14. I /We agree that the Arbitrator for fulfilling the duties set forth in the Arbitration clause of the General conditions to the contract shall be

1. The Superintending Engineer, P.W.D., buildings construction and maintenance circle, **Chennai** in case the value of claim does not exceed Rs.50,000/- (Rupees fifty thousand only).

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

2. In case of the value of the claim exceeding Rs.50,001/= and above, the remedy will be through the competent civil court only.

G.O.Ms. No. 1868, M.C. dated 6.9.1984 communicated in Chief Engineer (Buildings)'s circular endorsement No. CTO/A/155716/ 84 dated 24.9.1984..

15.. On behalf of the Governor of Tamilnadu and as duly authorised by the Governor under Article 299(1) of the constitution the above tender for a value of Rs. (Rupeesonly)

Is accepted on this dayof2019.

Signature of the witness in
full and address with name
in Block letters

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Lumpsum Contract

Tender Notice

For and on behalf of Governor of Tamilnadu sealed tender will be received by the Chief Engineer, P.W.D., Technical Education Circle, Chennai at his office up to 15.00 hours on **05.04.2022** for the work of **“Special maintenance and Repairs in Science Block, Arts Block, Road, Compound wall and other repair works in Government Arts College, Nandanam, Chennai 35”**

The tenders so received on **05.04.2022** and those received by post up to 15.00 hours on **05.04.2022** will be opened on **05.04.2022** at 15.30 Hours..

The tender should be in the prescribed form obtainable from the office of the Chief Engineer, PWD., Technical Education Circle, Chennai. The tenders will be opened by the Chief Engineer, PWD., Technical Education Circle, Chennai at the place and on the date aforementioned at 15.30 Hours. The tenderers or their agents are expected to be present at the time of opening of the tenders. The tenderer receiving officer will, on opening each tender, prepare a statement of the attested and unattested corrections therein and hand it over to the tenderer concerned and initial all corrections in the presence of the tenderers. If any tenderers or their agents find it inconvenient to be present at the time, then in such a case the tender receiving officer will, on opening the tender of the absentee tenderer, make out a statement of the unattested corrections and communicate it to him. The absentee tenderer shall then accept the statement of the corrections without any question whatsoever.

2. Tenders must be submitted in sealed covers and should be addressed to the Chief Engineer, PWD., Technical Education Circle, Chennai. The name of the tenderer and the name of the work should be noted on the cover.

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 and authorised officer who shall produce with his tender, satisfactory evidence of his authorisation. Such tendering corporation may be required before the contract is executed, to furnish evidence of its corporate existence.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

3. Each tenderer must also sent a certificate of Income Tax verification form the appropriate Income-Tax authority in the form prescribed therefore. This certificate will be valid for one year from the date of issue for all tenders submitted during the period. In the case proprietary and partnership firm, it will be necessary to produce the certificate afore mentioned for the proprietor or proprietors and for each of the partner as the case may be.

If the tenderer is a registered P.W.D., contractor and if a certificate for the current year has already been produced by him during the calendar year in which the tender is made, it will be sufficient if particulars regarding the previous occasion on which the same certificate was produced are given.

All tenders received without a certificate as aforementioned will be summarily rejected.

4. Earnest Money Deposit for the above work **Rs. 84500/- (Rupees Eighty four thousand five hundred only)** must accompany the qualification schedule for this work. The Earnest Money Deposit may be produced in any one of the following forms.
 - (i) Demand Draft issued by of Nationalized or scheduled Banks, drawn in favor of Executive Engineer, PWD, Technical Education Division, **Chennai.**
 - (ii) Small Savings / Scripts / Deposits / Accounts, Kisan Vikas Patras duly pledged in favour of the Executive Engineer, PWD, Technical Education Division, **Chennai.**

Note: Bank Guarantee will not be accepted towards Earnest money deposit.

Qualification schedule not accompanied with Earnest Money Deposit will be rejected as Non-Responsive tender. If the tenderer withdraws his tender, after the acceptance of tender or fails to pay the requisite security deposit amount within the specified period of time, the Earnest Money Deposit paid with tender will be forfeited. Communication to the unsuccessful tenderer will be sent in 7 days time from the date of communication sent to the successful tenderer. Within 15 days from the date of receipt of refund voucher duly stamped and signed, from the unsuccessful tenderer, refund of Earnest Money Deposit will be made. The refund will be authorized by the Chief Engineer / Executive Engineer by suitable endorsement on the Chalan. The earnest money will not be received in cash or currency by the P.W.D. officers, except exceptional cases. Where there are no Treasuries or banks within the jurisdiction of the officer calling for tenders. When currency notes are given, the tenderer should sign his name in full with date, on the back of all the currency notes given by him, whatever their denominations may be. No other mode of payment will be accepted, Bank Guarantee of any kind not be accepted.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

The Earnest Money Deposit should be remitted in the shape of Small Savings Scrips Deposits, Pass Books, National Savings Certificates, Indira Vikas Patras. If the Earnest Money is remitted in the shape of National Savings Certificates and Kisan Vikas Patras, it must be pledged in favour of the Executive Engineer concerned. If in the shape of Indira Vikas Patra, the name and address of the contactor should be filled in ink in the rear side of the Indira Vikas Patars and a consent letter should be enclosed mentioning the work for which EMD is remitted., If the E.M.D. in the shape of N.S.C. and K.V.P., is not pledged, the tender will be summarily rejected. The E.M.D. in the shape of Demand Draft/Bankers' cheque, should be drawn in favour of the Executive Engineer by designation only.

The earnest money deposit 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. The successful tenderer should convert the earnest money deposit already remitted into small savings script / Deposits / Accounts and pledge the same in the name of the **Executive Engineer P.W.D., Technical Education Division, Chennai.** before signing the agreement.

5. (i) The tender will remain valid for a period of Ninety days from the last date for receipt of tender. The validity period can be extended further, if the contractor given his consent in writing, specifying the period of extension.
- ii) The tenderer whose tender is under consideration shall attend the Chief Engineer / Executive Engineer's office before the end of the period specified by written intimation to him. If the tenderer fails to attend the office before the end of the specified period, his tender will not be considered. He shall forthwith, upon intimation being given to him of acceptance of his tender, by the officer duly authorized in this behalf under article 299(1) of the Constitution, hereinafter called the accepting authority, make a security deposit of 2% of the value of contract in one of the forms prescribed in Tamilnadu Public works 'A' code (i.e. by taking into account the amount of earnest money deposit (1% of the estimate cost) already deposited with the tender, it would be sufficient to pay the balance amount to make up the 2% of the value of contract for the purpose of security deposit). The above additional security deposit at 1% will be produced before signing the agreement. The Bank Guarantee will also be accepted. The security deposit to together with earnest money deposit and the amount withheld according to clause 64(1) of General conditions to the contract shall be retained as security for due fulfillment of contract.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

If such security deposit is made by the contractor, he shall follow the procedure laid down in the preceding paragraph for payment of earnest money deposit and such deposit shall not bear any interest.

iii) On receipt of written communication of acceptance of tender, if the tenderer fails to pay the requisite security deposit within the period specified in the written communication or backs out from the tender or withdraws his tender, the earnest money deposit shall be forfeited to the Government.

iv) If the contractor fails to carry out the contract after paying the requisite deposit, then he will be liable for the excess expenditure if any incurred to complete the work as contemplated in the general conditions to the contract.

It shall be expressly understood by the tenderer that on receipt of written communication of acceptance of tender from the accepting authority, there emerges a valid contract between the Governor of Tamilnadu and the tenderer for execution of the work without and separate written agreement. Hence for this purpose, the tender documents, i.e. tender notice, tender offered by contractor, general conditions to the contract, special conditions to contract, negotiation correspondences, written communication of acceptance, negotiation correspondences written communication of acceptance of tender etc., shall constitute valid contract and that will be the foundation of the rights of both the parties to the contract. Provided that it shall be open to the accepting authority to insist execution of any written agreement by the tenderer, if administratively considered necessary or expedient.

6. The tenderer shall examine closely the Tamilnadu Building Practice and also the general conditions to contract contained therein and sign the Divisional office copy of the Tamilnadu Building Practice and the addenda volume in token of such study before submitting his tender unit rates, which shall be for finished work in site. He shall also carefully study the drawing and additional specifications and all the documents connected with the contract.. The Tamilnadu Building Practice and other connected documents which form part of the agreement to be entered into by the accepted tenderer such as specifications plans descriptive specification sheet regarding materials etc., can be seen at any time between 10.00 Hours and 17.45 Hours on the office days in the office the Chief Engineer, P.W.D., Technical Education Circle, Chennai A copy of the set of contract documents can also be had on payment of **Rs.15000/-** + **GST Rs.1800/-** Each set inclusive of sales tax, surcharge thereon.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

7. The tenders attention is directed to the requirements, for materials under the clause "Materials and workmanship" in the general conditions to contract, materials conforming to the ISI standards shall be used on the work and the tenderer shall quote his rates accordingly.

8. Every tenderer is expected before quoting his rates/ percentage to inspect site of the proposed work. He should also inspect the quarries and satisfy himself about the quality and availability of materials. The best class of materials to be obtained from the quarries or other sources defined 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 Executive Engineer in any case, shall be submitted for the Executive Engineer's approval before the supply to site of work is begun. If the contractor, after the examination of the source materials defined in the lead particulars statement, is of the opinion that the materials complying with standard or other specifications of the contract cannot be obtained in sufficient quantities from the source, he shall state clearly in his tender and state wherefrom he intends to obtain materials subject to the approval of the Chief Engineer/ Executive Engineer.

The Government will not however, after acceptance of a contract rate pay any extra charges for lead or for any other reason in case the contract or is found later on to have misjudged the materials available. Attention of the contractor is directed to the standard Preliminary specification . to contract regarding payment of seignior age, tools etc.

9. The tenderers' particulars of attention is drawn to section and clauses in the standard general conditions to contract dealing with

1. Test, inspection and rejection of defective materials of work.
2. Carriage
3. Construction plant
4. Water and lighting
5. Cleaning up during progress and for delivery
6. Accidents
7. Delays
8. Particulars of payment

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

The contractor should closely peruse all the specification clauses which govern the rates, which he is tendering.

10. A schedule of quantities accompanies this tender notice. It shall be definitely understood that the Government does not accept any responsibility on the correctness or completeness of this schedule and that this schedule is liable to alterations by omission deduction or additions at the discretion of the Executive Engineer, Technical Education division, or as set forth in the conditions of contract.

The tenderer will however base his lump sum tender on this schedule of quantities. In the case of percentage tender system for the work costing up to Rs.20 lakhs, the tenderer should note the tender percentage excess/less (instead of quoting specific rate for each item in the schedule for the works with reference to total estimate value put to tender. In case of other works costing more than Rs.20 lakhs he should quote rate for each item. He should quote specific rates for each item in the schedule and the rate should be in Rupees and in sum of five paise. The rates should be written both in words and figures and unit in works. The tenderer should also show the total of each of and the Grand total of the whole contract and quote in the tender a lump sum for which he will undertake to do whole work subject to the contract, such lump sum agreeing with the total amount of schedule 'A' . This schedule accompanying the lump sum tender shall be written legibly and free from erasures, over-writings, or conversions of figures, corrections where unavoidable shall be made by crossing out, initialing dating and rewriting.

All percentages quoted in the tender shall be exclusive of sales tax, payable under the General Sales Tax Act as amended from time to time (including amendment Act 28/1984) and that the contractor is responsible to file the Sales Tax Return and pay the amount of tax as demanded by the Commercial Tax Department. No request for payment of Sales Tax separately in addition to tendered rates due to any pleas of subsequent of levy or increase in tax will be entertained vide also Clause 38 (2) of General Conditions to contract.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

11. Tenderers offering a percentage deduction from or increase on the estimate amount (except in the case of tender called for specifically under the percentage/ rate tender system) and those not submitted in proper form or in due time will be rejected. Rates or lump sum amount for items not called for shall not be included in the tender. No alteration which is made by the tenderer in the contract from, the conditions of contract, drawings, specifications or quantities accompanying same will be recognized, and if any such alterations are made, the tender will be void.

12. The tenderer should workout his own rates, without reference being made to the Public Works Department current schedule of rates or the Public Works Department estimate rates which are not open for inspection by tenderers. However, in case of tenders called for under the percentage rate tender system the tenderers should work out his own rate, but quote his percentage rate above or below, the total estimate cost of work of the department indicated in the tender schedule.

13. The price at which and the source from which certain particular materials shall be obtained by the contractor or given at the end of the schedule accompanying the tender form. The tenderers must accept the materials at these prices and shall quote their price for finished work accordingly. Notwithstanding any subsequent change in the market value, for those materials, the charge to the contractor will remain as originally entered in the written Contract. No centage or incidental charges will be borne by The Government in connection with this supply.

14. The attention of the tenderers is directed to the contract requirements as to the time or beginning work, the rate or progress and the dates for the completion of the whole work and its several parts. The following rates of progress and proportionate value of work done from time to time, as will be indicated by the Executive Engineers certificates of the value of work done will be required. Date of commencement of this programme will be the date on which the site (or premises) is handed over to the contractor.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Period after date of commencement	Percentage of work completed (Based on the contract lump sum amount)
1st Three Months	100%
TOTAL THREE MONTHS ONLY	100%

15. No part of the contract shall be sublet without written permission of the Executive Engineer nor shall transfer be made by power of attorney authorising others to receive payment of the contractor's behalf.

16. If further necessary information is required, the Executive Engineer of the Divisions will furnish such , but it must be clearly understood that the tenders must be received in order, and according to instructions.

17. The Chief Engineer or other sanctioning authority reserves the right to reject any tender or all the tenders.

18. The tenderers who are themselves not professionally qualified shall undertake to employ the qualified technical men at their cost to look after the work. The tenderers should state in clear terms whether they are professionally qualified or whether they undertake to employ technical men required by the department specified in the schedule below for the work. In case the selected tenderer is professionally qualified or whether they undertake to employ technical men required by the department specified in the schedule below .or has undertaken to employ technical men under him, he should see that one of the technically qualified men should always be at site of the work during working hours personally checking all the items of works and paying extra attention to such works as may demand special attention e.g. reinforced concrete works etc.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

THE SCHEDULE

Value of contract	Minimum qualification and no. of technical persons to be employed.
1. Above Rs.1,00,000/- and up to Rs.5.00 lakhs	1. One diploma holder in Civil Engineering (Or) 2. Not less than one retired junior engineer.
2. Above Rs.5.00 lakhs and up to Rs.10.00 lakhs	1. One B.E., (Civil) (or) 2. Equivalent Degree holder (or) 3. Not less than one retired sub Divisional officers AEE/ADE (or) One Diploma holder with three years experience.
3. Above Rs.10.00 lakhs and up to Rs.25.00 lakhs	1. One B.E., (Civil) with 3 years experience plus one Diploma holder in Civil Engineering. (or) 2. Equivalent Degree holder with 3 years experience plus one Diploma holder in Civil Engineering. (or) 3. Not less than one retired Sub-Divisional officer plus one diploma holder in Civil Engineering. (or) 4. Two Diploma Holder in Civil Engineering with 3 years and 5 years experience respectively.
4. Above Rs.25.00 lakhs and up to Rs.50.00 lakhs	1. One B.E., (Civil) with 3 years experience plus two Diploma holder in Civil Engineering. (or) 2. One B.E., (Civil) with 3 years experience plus two retired junior Engineering. (or) 3. Equivalent Degree holder with 3 years experience plus two Diploma holders in Civil Engineering / two retired junior engineers. (or) 4. One retired Sub Divisional Officer (AEE or ADE) plus two Diploma Holders in Civil Engineering. (or) . One retired Sub Divisional Officer (AEE or ADE) plus two retired Junior Engineers.
5. Above Rs. 50.00 lakhs	1 One B.E. (Civil) or equivalent degree holder with three years experience or not less than one retired Assistant Executive Engineer. AND 2 One B.E. (Civil) or equivalent degree holder AND 3 One more diploma holder in Civil OR One retired Junior Engineer

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Note : Item 1 2,3,4,5 should be scored-out in case where not applicable to the particular work.

Note (2): A penalty of Rs.2000/- per month . for Diploma holder and for Rs.5000/- per month for degree holder, be levied in the case of default on the part of contractors in following the norms laid down above.

Note (3) : The employment of technical assistants would be based only on the value of contract, Engineers, with mechanical engineering qualification and retired from civil engineering departments are also suitable to supervise the civil engineering works because of their experience in civil engineering field.

Note(4) : In case the contractor who is professionally qualified and not in position to remain always at the site of the work and to pay extra attention to such as may demand special attention (e.g) RCC work etc., he should employ technical qualified men (as prescribed above).

Note (5) : It will not be incumbent on the part of the contractors to employ Technical Assistant / Assistants when the work is kept in abeyance due to valid reasons and if during such period in the opinion of the Executive Engineer the employment of Technical Assistant / Assistants is not required for the due fulfillment of the contract.

19. A tenderer submitting a tender which the tender accepting authority considers excessive and or indicative of insufficient knowledge of current prices or definite attempt at profiteering will render himself liable to be debarred permanently from tendering or for such period as the tender accepting authority may decide. The tender rates should be based on the controlled price for materials if any, fixed by the Government or the reasonable price permissible for the tenderer to charge a private purchase under the provisions of Clause 8 of Hoarding and the Profiteering Prevention Ordinance 1943 as amended from time to time and on similar principles in regard to labour and supervision in the construction.

20. The contractor shall comply with the provisions of the Apprentices Act 1961 and the rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of the contract and the competent authority, may at his discretion, cancel the contract or invoke any of the penalties for breach of contract provided in the conditions of contract.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the Act. The contractor shall during the currency of the contract ensure engagement of the apprentices in the categories mentioned below who may be assigned to him by the Director of Employment and Training/State apprenticeship Advisor, Tamilnadu, The Contractor shall train them as required under the apprentices Act 1961, and the rules made there under and shall be responsible for, all obligations of the employer under the said act including the eligibility to make payments to the apprentice as required under the said Act.

Value of contract	Category	No. to be appointed
Rs. 1 lakh and up to Rs. 3 Lakhs	❖ Building constructor	1
	❖ Brick layer	1
Above Rs. 3 Lakhs and up to Rs. 10 lakhs	❖ Building constructor	1
	❖ Brick layer	1
	Diploma holder in civil Engineering	1
Above Rs. 10 Lakhs and up to Rs. 50 lakhs	1. Building constructor	1
	2. Brick layer	1
	3. B.E., (Civil) or Equivalent Degree holder	1

Unless the contractor has been exempted from engagement of apprentices by the director of employment and training / State Apprenticeship Advisor a certificate to the effect that the contractor had discharged his obligation under the said Act. Satisfactorily should be obtained from the Director of Employment and Training / state apprenticeship adviser and the same should be produced by the contractor for final payment in the settlement of the contract.

21. The contractor should employ one I.T.I. trained mason for every ten masons of part there of in case of non – availability of ITI trained masons, the contractor should obtain the prior approval of the Executive Engineer concerned, before proceeding with the contract with other kind of masons.

22. (i) . The contractor shall be solely responsible for the payments of Sales Tax under the provisions of the Madras Central Sales Rules Tax Act 1939 (Madras Act II of 1939) as in force for various items of work . Time being and the rates for the various items of work shall remain unaffected by the changes that may be made from to time to time in the rate at which such tax is payable.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Sales tax and the materials supplied to the contractor as amended from time to time shall be paid by them separately and the relevant chalans produced to the departmental officers.

(ii) The Contractor shall pay Sales Tax as per net provision under 7F for deduction of Tax at source introduced in Tamilnadu General Sales Tax Act 1959 by Tamilnadu Act 15 of 1999. Accordingly 2% in respect of civil work to be deducted. The procedure being followed for deduction of Income tax at source may be followed in respect of Sales Tax on works contract also.

The Chief Engineer, reserves to himself the right of allotting the different sub-works to the different contractors or to one and the same contractor as he may decide after the receipt of tender.

23. Additional security to be furnished for the lesser rates

On evaluation of tender, if it is found that if the overall quoted amount of the tender is less than 5 to 15% of the value put to tender, the contractor shall pay an additional security at 2% of the estimated value. If the tender discount exceeds 15% to 20% the contractor shall pay an additional security deposit of 50% of the difference between the quoted amount and estimate amount. Failure to furnish the additional security deposit within 15 days from the date of receipt of acceptance order and execute the agreement shall entail cancellation of award contractor and forfeiture of EMD furnished.

25. In case of contractor for construction of buildings either permanent or semi-permanent buildings, a sum equivalent to 2½ % of the value work done will be retained from the Government for a period of one year reckoned from the date of completion of the work in order to enable departmental officers to watch the effect of all seasons on the work done by the contractor. The amount so far retained with the Government will be returned only on the expiry of one year period referred to above and on execution of indemnity bonds by the contractor for a further period of four years. The contractor shall be liable to set right all defects arising out of his faulty execution or sub-standard work noticed during the above five years period at his cost.

26. The contractor is bound by all the conditions of the clauses of the general conditions of contract amended from time to time.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

27. In the event of work if transferred to any other Circle / Division/ Sub-Division and Chief Engineer/ Executive Engineer/ Assistant Executive Engineer who is in-charge of the circle / Division / Sub-Division having jurisdiction over the work shall be competent to exercise all the powers and privileges reserved in favour of the Government.

PUBLIC WORKS DEPARTMENT
TECHNICAL EDUCATION CIRCLE, CHENNAI - 25.

SECTION. II
LIST OF DRAWINGS SCHEDULE.
SCHEDULE. B.

Name of work: **"Special maintenance and Repairs in Science Block, Arts Block, Road, Compound wall and other repair works in Government Arts College, Nandanam, Chennai 35"**

Sl. No.	C.A. Job No.	Drawings No.	Description.
1			
2			

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

EXTRACT OF AMENDMENT

Amendment to clause 69.1 of General Conditions, contract based on orders in G.O.Ms.No.1152/ PW/DT.19.6.80.

MODIFICATION AND AMENDED IN G.O.Ms.No.

Cause – 69-1 – of General conditions of contract :

In case of any dispute or difference between the parties to the contract either during the progress or after the completion of the works or after determination, abandonment or breach of the contract or as to any other matter or thing arising there under except as the matters left to the sole discretion of the Executive Engineers under clause 18,20,25-3-27-1, 34, 35 and 37 of General conditions of contract or as to the withholding by the Executive Engineer of the payment of any bill to which the contractor may claim to be entitled, the either party shall forth with give to the other notice or such of difference and dispute or difference shall be and is hereby referred to the arbitration of the Superintending Engineer of the nominated circles mentioned in the articles of agreement (herein after called the Arbitrator) in cases where the value of claim is less than or up to Rs.50,000/-.

In case where the value of claim is more than Rs.50,000/- the parties will seek remedy through the competent civil court.

Execution of Civil and Electrical works in a single agreement as per G.O.(Ms).No.16 P.W(G2) Dept, Dated:17.01.2018

- a) This Project is proposed to be executed with Civil and Electrical works in a single agreement, as one package.
- b) The Civil contractor while offering for tender, has to furnish an undertaking from the Electrical Engineer, who is having Electrical License issued from Electrical Licensing Board, Government of Tamil Nadu stating that the concerned electrical works will be executed under his supervision.
- c) Electrical contractor has to engage qualified Civil engineers with good credentials in Civil Engineering works. They have to produce consent letters from the Civil Engineers stating that they are willing to work in that particular site.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

SPECIAL CONDITION FOR ERADICATION OF CHILD LABOUR

G.O.(MS) No.53 Labour and Employment (V II) Department/Dated 12.5.03

The work contract assigned to the Contractor's shall be cancelled if they engage Child Labour in executing works and such Contractors should be, black listed for three years.

PART –IV

SPECIAL CONDITIONS

1. Clean fresh water and **M- sand** shall be used in all cases.
2. Only clean fresh water shall be used on the work. The contractor shall make his own arrangements for water and shall meet all charges therefore. The special attention of the contractor is drawn to clause 36 General conditions of contract regarding water and lighting.
3. The broken stone for concrete and RCC works should be granted and passed by the Executive Engineer.
4. All iron work or steel work of every kind except steel rods that are to be embedded in cement concrete shall immediately arrive at the site and properly scrapped with wire brushed and given a priming coat of approved lead painting without claiming for extra.

5. **HOLDFASTS :**

Iron holdfasts shall be fixed in the walls using cement mortar 1:3 for that portion of fixing at the time of construction of walls. It should be mixed with cement concrete 1:3:6 using 20mm gauge broken granite stone jelly for proper anchorage and binding. No separate rate for such pockets of concrete filling at holdfast points and for using C.M. 1:3 for that portion, will be allowed and this will be measured as masonry along with adjacent masonry.

6. **WOOD :**

Teakwood shall be best Indian Teakwood only and shall be subject to inspection and approval by the Executive Engineer before use on the work. Country wood where specified shall be Karumarudu, Pillamarudu, Kongu, Veteak for scantling and Manja Kadambu, Aiyini for planks as may be specified and approved by the Executive Engineer.

7. Holes and charges of electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claiming extra.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

8. The work will be carried out with the least hindrance to the adjoining building and officers and the contractor will be responsible for any damages, caused to the existing fixtures electric fittings etc., in the course of execution and the contractors shall make good of damage without claiming extra.

9. T. BEAMS :

In the of 'T' Beams and ELL beams the quantity given in the schedule is the quantity of the rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab portion only. For all RCC works the rate shall include the treatment of bearing as per specification No. 30 of TNBP.

10. CONCRETE WORKS :

All exposed concrete surface will be required to be finished by cement plaster as per specification No. 30E (a) of TNBP.

11. PLASTERING CONCRETE :

All corners shall be finished sharp using C.M. 13 not exceeding 3 inch width on each side of the corner. So also the edges of beams of door and windows opening soffits, shall be finished sharp using rich mortar and finished truly vertical or horizontal as the case may be. The unit rate quoted by the contractor for plastering shall be inclusive of the cost of finishing as above and so separate claim for extra rate will not be entertained. However, the cement utilized for the work will be taken into consideration in the adequacy statement for issued of departmental cement to the contractor.

12. WORKS IN DIFFERENT FLOORS:

If separate rate is not called for, for execution of similar items of work in different floors, then, single rate quoted will alone be entertained uniformly for execution of such items of works in different floors. No claim for extra rate will be entertained under any circumstances.

13. The Chief Engineer reserves the right to split up the work and entrust the main work, internal water supply and sanitary arrangements to different contractors.

14. The projection if any to the masonry will be measured under the relevant items and no extra will be paid for finishing the same.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

15. (i) The works in Public Works Department (Buildings) and irrigation executed by the contractor under the contract shall be maintained at contractors' risk until the work taken over by the Executive Engineer. The Contractor shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other conclusions of nature and other natural calamities, risks arising out of acts of God. During such periods and that the Government shall not be liable for any loss or damage occasioned by or arising out any such acts of God.

Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate rate is called for, for centering works in the schedule.

15. Concrete For R.C.C. works

All cement concrete for RCC works shall be machine mixed and vibrated.

Additional specifications :

1. The arrangements of M.S. Rods for reinforcement for such RCC works shall be in accordance with departmental drawing supplied.
2. The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Executive Engineer according to clause 8 of TNBP 30. They must be made smooth and even perfectly level to top so as to give smooth and even finish to the RCC ceilings alternatively the contractor should use steel sheets over wooden firms centering and form work shall be provided to the extent and as ordered by the Executive Engineer during the execution
3. All time mortar shall be ground mixed in mortar and will be as per T.N.B.P.
4. M.S. steel rods should be cut and placed as reinforcement with proper care according to the available rods at site so as to ensure the minimum possible wastage.
5. Ordinary the contractor shall be responsible for the collection of all materials required for the work.
6. The required G.I. Pipes if available will be supplied free of cost of site of work. The Surplus G.I. Pipes if any will be returned in good condition to the department failing which double the cost at market rate plus centage charges will be recovered form the contractor.
7. Construction Materials;

Supplemental to clause of 20 of General conditions.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

7.1 Cement :

The contractor has to make his own arrangements for the procurement of cement to required specification for the works subject to the followings.

- a. The contractor shall procure cement required for the works only from reputed cement factories (Main producer or their authorized agents, manufacturing cement at I.S.I. standard) acceptable to the Engineer-in-charge. The contractor shall be required to furnish to the engineer – in-charge bills of payment and test certificates issued by the manufactures or their authorized agents to authenticate procurement of quality cement from the approved cement factory. The contractor shall make his own arrangements for safe haulage and adequate storage of cement.
- b. The contractor shall procure M20 Grade Portland Cement in standard packing of 50 kg per bag from the authorized manufactures. The contractor shall make necessary arrangements at his own cost to the satisfaction of Engineer-in-charge for actual weighment of random sample from the available stock and shall conform with the specification laid down by the Indian standards institution or other standard foreign in situation as the case may be cement shall be got tested for all the tests as directed by the Engineer-in-charge at least one month on advance before the use of cement bags brought and kept on site godown.
- c. The employer will furnish air retraining agents and admixtures required to the contractor free of cost at the employer stores. The use of such admixtures and agents shall be made as per the instructions of the Engineer-in-charge. The cost of cartage / storage handling batching mixing shall be borne by the tendered for concrete.
- d. The cement shall be brought at site in bulk of approximately 50 Tones or as decided by the Engineer-in-Charge for large works.
- e. The Cement godown of the capacity to store a minimum of 1000 bags of cement shall be constructed by the contractor at site of work, for which no extra payment shall be made. The contractor shall facilitate inspection of the cement godown by the Engineer-in-Charge at any time.
- f. The contractor should store the cement of 60 days requirement at least one in advance to ensure the quality of cement brought to site and shall not remove the same without the written permission of engineer-in-charge.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

- g. The contractor shall forth with remove from the works area and cement that the Engineer-in-charge may disallow for use on account of failure to met with required quality and standard.
- h. The contractor will have to construct sheds for storing cement having capacity not less than the cement required for 90 days use at approved locations. The Engineer-in-Charge of the representative shall have free access to such store at all times.
- i. The contractor shall further at all times satisfy the Engineer-in-charge on demand by production of records and test books or by submission of returns and other proofs as directed that the cement is being used as tested and approved by Engineer-in-charge for the purpose and the contractor shall at all times, keeps his record up to so as to enable the Engineer-in-Charge to apply such checks as the may desire.
- j. Cement which has been unduly long in storage with the contractor or alternatively has deteriorated due to inadequate storage and thus become until for use on the works will be rejected by the Department and no claim will be entertained. The contractor shall forth with remove from the work area any cement the Engineer-in-charge may disallow for use of work and replace by cement complying with the relevant Indian standards.

7.2 Steel

The contractor shall provide mild steel (MS) reinforcement basis, High yield strength deformed (HYSD) bars, rods and structural steel etc., required for the works only from the main and secondary producers manufacturing steel or other authorized agents to the prescribed specifications of Bureau of Indian standards requirements and licensed to affix I.S.I. test certificate issued by the Govt. approved laboratory certification marks and acceptable to the Engineer – in – Charges, necessary I.S.I. test certificate are to be produced to Engineer-in-charge before use on works.

The diameters and weight of steel should be as follows:

S. No.	Diameter of rod	Sectional weight in kg per running meters both for plan & 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

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

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.	34	Millimeters	6.71
14.	36	Millimeters	7.99
15.	40	Millimeters	9.86
16.	42	Millimeters	10.88

Note if any rods other those specified above are used the weight shall be as per standard steel tables.

Act No. 15 of 1999, Tamilnadu General Sales Tax (Fifth Amendment)

In let further to amend the Tamilnadu General Sales Tax, Act 1959

1. (1) This Act may be called the Tamilnadu General Sales Tax (Fifth Amendment) Act 1999.

(2) It shall come into force on such date as the State Government may by notification, appoint.

2. After section 7-F of the Tamilnadu General Sales Tax Act 1959, the following section shall be inserted namely.

7-F Deduction of tax at source in works contract (1) not with standing anything contained in this Act, every person responsible for paying any sum to any dealer for execution of works contract shall at the time of the payment of such sum, deduct an amount calculated at the following rate, namely

- (i) Civil Works Contract – Two percent (2%) of the total amount payable to such dealer
- (ii) All other works contract – Four percent of the total amount payable to such dealers.

Provided that no deduction under sub-section (1) shall be made where.

- a. no transfer of property in goods (whether as goods or in some other form) is involved in the execution of such works contractor.
- b. The dealer produces a certificate from the assessing authority concerned that the he has no liability to pay or has paid the tax under section 3-B or section 7-C, or

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

- c. Declared goods are purchased from a registered dealer within the state and of works contract in the same form in which such goods were purchased.

Provided further that no such deduction shall be made under this section where the amount or the aggregate of the amount paid or credited or likely to be paid, during the year by such person to the dealer for execution of the works contract including civil works contract does not or is not likely to exceed one lakh rupees.

Explanation, for the purpose of this section

(i) the term person shall include

- (a) the central or a state government
- (b) a local authority
- (c) a corporation or body established by or under a central or state Act,
- (d) a company incorporation under the companies Act. 1956 (Central Act 1 of 1956),

including a central or state government undertaking.

- (e) a society including a Co-operative society
- (f) an educational institution (or)
- (g) a trust

(ii) the term "Civil Works Contract" shall have the same meaning as in the Explanation to section 7-c.

1. Any person making such deduction shall deposit the sum so deducted to such authority in such manner and within such time, as may be prescribed.
2. Any person who makes the deduction and deposit, shall within fifteen days of such deposit issue to the said dealer a certificate in the prescribed form for each deduction, separately and send a copy of the certificate of deduction to the assessing authority, having jurisdiction over the said dealer together with such documents, as may be prescribed.
3. On furnishing a certificate of deduction referred to in sub-section (3) the amount deposited under sub-section (2), shall be adjusted by the assessing authority towards tax liability of the dealer under section 3-B or section 7-c, as the case may and shall constitute a good and sufficient discharge of the liability of the person making deduction to the extent of the amount deposited.
4. Any person who contravenes the provisions of sub-section (1) or subsection (2) shall pay in addition to the amount required to be deducted and deposited interest at two percent per month of such amount for the entire period of default.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

5. Where the dealer proves to the satisfaction of the assessing authority that he is not liable to pay tax under section 3-B or section 7-C the assessing authority shall refund the amount deposited under sub-section (2) after adjusting the arrears of tax if any due from the dealer in such manner as may be prescribed.
6. The tax or interest under this section shall become due without any notice of demand on the date of actual for the payment by the person as provided under sub-sections (1) and (2).

(By order of the Governor)

ADDITIONAL CONDITIONS : 1

1. Paints of approved quality are to be procured by the contractor himself and used on the work . The paint tin must be opened in the presence of Section officer/ Sub Divisional Officer and then only used on the work after getting the approval of the concerned officers.

2.The contractor shall be responsible for the safe custody and storage of materials under any conditions of the places where the works are approved by the Executive Engineer.

3.No royalty shall be charged where due for materials, quarried from the public works department of district board of their government quarries, assistance as necessary will be given to the contractor by the P.W.D., to obtain access to quarries approved by Executive Engineer. No plot rent shall be charged so far as materials stocked in the Government land during the course of construction provided such materials are removed within the month-after the works is completed.

4. Royalty (or) charges due for use of private quarries and private and shall be paid by the contractor.

5. The contractor shall form his own approach road to the works site for which no extra will be due to him. On completion of work, the contractor shall not be permitted to remove the materials, laid for formation of road if the contractor, is allowed to used the existing road he shall maintain them in good condition at his own cost, throughout the period of the contract.

6. Any surplus materials remaining at the site will not be generally taken over by the department whether before or after the completion or determination of contract. Such materials either which were originally produced by the contractor (or) were issued to them by the department and charged to their accounts are the property of the contractors and can however be taken over by the department if required for use on

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

other which are in progress only the special arrangements and at the prevailing market rates viz., the rates at which the article or articles of a similar description can be procured at a given time from public market.

If the materials were originally used by the departments the price allowed to the contractor on requisition shall not exceed the amount charged to the contractor excluding the cost of storage charges if any.

7. The surplus materials which were originally issued to the contractor by the department for use in the work shall not be removed from the site of work without getting the written permission of the Executive Engineer.
8. If night work is required to fulfill the agreed rates of progress all arrangements shall be made by the contractors inclusive of lighting without any claim for extra rates.
9. The contractor shall not employ the labour below the age of 18 years and shall also note that he must offer employment to Ex-servicemen ex toddy tappers and unemployed agricultural laborers as far as possible.
10. Any of the item in the schedule may be omitted or radically altered. No variation in rate shall become payable to contractor on account of such omissions (or) variation in quantities.
11. References to TNBP in the schedule of quantities referred to printed. 1985 and 1988 and addenda and corrigenda issued thereafter.
12. The construction of building will be deemed to be completed only if any items of works including finishing items of works contemplated therein are executed.
13. The contractor shall abide the contractor's labour regulation or the P.W., Framed by the Tamilnadu Government.
14. In respect of all contract with contract value exceeding Rs.5,000/- income tax 2% of the gross of amount irrespective of the bill amount payable to the contractor will be recovered at source.
15. the sales tax clearance certificate should be furnished before the finalization of contract.
16. (a). E.M.D:

The acceptance of E.M.D. in various approved forms is subject to the specific condition that the successful tenderer should pay the security deposit (including E.M.D.) in the form of small savings Scripts duly pledged in favour of the Executive Engineer concerned in lieu of other mode of payment made for E.M.D.

(b) Security deposit:

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

In case of contractors for building works the security deposit (i.e.2%) of the value of contract minus the E.M.D. already remitted is to be produced in the shape of small saving Scripts, deposits, accounts duly, pledged to Executive Engineer, PWD of the Division concerned before signing the agreement.

16. Sales Tax:

All rates quoted in the tender shall be inclusive of Sale Tax payable under General Sales Tax act as amended from time to time including amended act of 28.84 and the contractor is responsible to file sales tax return and pay the amount of tax as demanded by the commercial tax department. No request for payment of sales tax separately in addition to tendered. Sales Tax due to any plea of subsequent levy (or) increase in tax will not be entertained. Vide also clause 38 (2) of general conditions to contract.

17. Risk Insurance :

The work executed by the contractor under these contract shall be maintained at the contractors risk, until the work is taken over by the Executive Engineer. The Government shall not be liable to pay for any loss or damages occasioned by or arising out of fire, flood, volcanic eruption, earth quake, other convulsion of nature calamities, risks arising out of acts of God during such period and that the option whether to take insurance coverage or not to cover such risks is left to the contractor.

18. Standard specifications:

For detailed description of various items of works to be executed in addition to the brief description given in the schedule A and for the rights and obligations of the contractors etc., the attention of the contractors is invited to Tamilnadu building practice which should be followed in all respect both in latter and sprit. The materials used, the workmanship, the mode of execution of the work etc., should confirm the relevant specification on TNBNP.

19. Safety code:

The safety measures and all amenities for the labours shall be made by the contractor at his cost as indicated in the safety code vide appendix to general conditions to contract and clause 34,35 and 42-1 to 42-7 of general conditions of contract.

20. Retention of 2 ½% for one year:

In case of contracts for construction of buildings either permanent (or) semi-permanent buildings a sun equivalent to 2 ½% of the value of work done will be retained with the Government for a period of one years reckoned from the date of completion of the work done by the contractor.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

The amount so retained with the Government will be refunded only on expiry of one year period referred to above and on execution of indemnity bond by the contractor for a further period of four years.

The contractor shall be liable to set right all defects arising out of his faulty execution (or) sub-standard work noticed during the above five years period at his cost.

21.Recovery of dues under revenue recovery act:

Any amount fallen due from the contractor on account of this contract even after recovering from the bills for this work and any other contract awarded to the contractor than the amount is liable to be recovered under the provision of Revenue Recovery Act.

Additional condition of contract : II

1. The contractor shall at his own expense provide arrangement for the provision of footwear for any labour doing cement mixing work and all other similar type of work involving the use of tar mortar etc, to the satisfaction of the engineer incharge and on his failure to do so Govt. shall be entitled to provide same and recover the cost from the contractor.
2. when there are complaints of non payment of wages to the labour bills of the contractor may be with – held pending a clearance certificate from the labour department.

ADDITIONAL CONDITIONS .. III

Rules for the provision of Health and Sanitary arrangements for workers employed by the P.W.D., and their contractors.

The contractor's special attention is invited to clauses 37, 38, 39 and 51 of general conditions of Contract in the TNBP and he is requested to provide at his own expense the following amenities to the satisfaction of the Executive Engineer.

1. First Aid :

At the work site, yard shall be maintained in a readily accessible place, first aid appliances and medicines including supply of sterilized dressings and sterilized cotton wool. The appliance shall be keep in a good order. They shall be placed under the charge of responsible person who shall be readily available during working hours.

2. Drinking water:

1.

- a. water of good quality fit for drinking purpose shall be provided for the workpeople on scale not less than fifteen litres per head per day.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

- b. Where drinking water is obtained from an intermittent public water supply system each work place shall be provided with storage tank where such drinking water shall be stored.
 - c. Every water supply and storage shall be at a distance of not less than 50 Feet from any latrine drain or sources of pollution where water is to be drawn which is within such proximity of latrine drain or any other source of pollution the well shall be property 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.
2. A reliable pump shall be fitted to each covered well, the trap door shall on kept looked and opened only for cleaning or inspection which shall be done at least once in a month.

3. Washing and bathing places

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

4. Latrines and urinals

These shall be provided within premises of every work place latrines and urinals in an accessible place and the accommodations separately for each of them shall be on following scale or on the scale as directed by Executive Engineer in any particulars use.

- 1. Where the No., of persons employed does not exceed 50-2 seats
- 2. Where the No. of persons employed excess 50 but does not exceed 100-3 seats.
- 3. For every additional 100 persons- 3 seats. If women are employed separate latrines and urinals screened from those for Men shall be provided on the same scale. Except in work place provided with water flush out latrines connected with a water borne sewage system all latrines shall be provided with receptacle on dry earth system which shall be cleaned at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The receptacles shall be tarred inside and outside at least once a year. The excreta from the latrines shall be disposed off at the contractors expenses in outway pipe approved by the local public health authority. The contractor shall also employ adequate No., of scavengers and conservancy staff to keep the latrines and urinals in a clean conditions.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

4. Shelters during rest

At every work site there shall be provided free of cost two suitable sheds one for meals and other for rest separately for men and women for the use of laborers.

5. Creches :

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

1. Thatched roofs
2. Mud floors and walls
3. Plants spread over the mud floor and covered with mattings.

The site of the crèches should vary according to the No. of women workers. The crèches should be properly maintained and necessary equipment like toys etc., shall be provided huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be Aayas in readiness, Sanitary urinals shall be provided to the satisfaction of the health officer of the area concerned.

The No of huts shall be restricted to children, their attendants and mothers of the children.

6. Canteen:

Cooked food canteen on a moderate scale shall be provided for the benefits for the workers as it is considered expedient.

7. Sheds for workmen

The contractor should provide at his own expense ahead for housing the workmen. The sheds shall be on standard not less than the cheaper shelter type to live in which the work people pertaining in the locality are accustomed to. A floor area of 1.80 mx1.30m for two persons shall be provided. The sheds to be in rows with 1.3 m a clan space between sheds and 9m clear space between rows if condition permit. The work people camp shall be laid out in units of 400 persons each unit to have a clear space of 12m all round.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Additional condition: IV

Safety provision in the building industry condition in addition to clause 4 of preliminary specification T.N.B.P.

Article-1: PART -1

1. Suitable scaffolds shall be provided for workmen for all work that cannot be safely done from ladder or by other means.
2. A Scaffold shall not be constructed taken down or subsequently altered except.
 - a) under the supervision of the competent and responsible persons and
 - b) by as far as possible competent workers possessing adequate experience in such kind of work.
3. Scaffolds shall be so constructed that on part there of can displaced in consequence of normal use.
4. Scaffolds shall not be over loaded one as far as practicable the load shall be evenly distributed. Before installing lifting gear or scaffolds, special precaution shall be taken to ensure the strength and stability of the scaffolds.
5. Scaffolds shall be periodically inspected by a competent persons.
6. Before allowing a scaffold to be used by the workmen every employer shall whether the scaffold has been executed by his workmen or not take steps to ensure that it functions full with the requirements of this articles.

Article -2.

1. Working platforms gateways and stairways shall be so constructed that part thereof can save unduly (or) unequally.
2. To be so constructed and maintained to obviate from risks of persons tripping or sliding and to be kept free from any un-necessary obstructions.
3. Every working plat form gateway working place and stairways shall be suitably tested.

Article -3.

1. Every opening in the floor of a building or n a working platform shall except for the time and to extent required to allow the access of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

2. When persons are employed on a roof there is danger of falling from height exceeding than to be prescribed by national laws of regulations suitable precaution shall be taken to prevent the fall of persons or materials.
3. Suitable precautions shall be taken to prevent persons being struck by articles which might fall from scaffolds or other working places.

Article -4:

1. Safe means of access shall be provided to all at working platforms and other working places.
2. Every ladder shall be securely fixed and of such length as to provide securely hand – hold and foot bolt every position which it is used.
3. Every place where work is carried out and the means of approach there to shall be adequately lighted.
4. Adequate precautions shall be taken to prevent danger from electrical equipment.
5. No matter is on the site shall be constructed or placed as to cause danger to any persons.

Article -5 (General rules as to hoisting appliance : Article :5)

1. Hoisting machines and tackle including their attachments encharges and supports shall
 - a. Be of good mechanical constructions sound materials and adequate strength and free from patent defect and to be kept in good working order.
 - b. Every rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.

Article -6:

1. Hoisting machines and truck shall be examined and adequately tested after erection on the site and before use and pre-examined in position at intervals to be prescribed by national law of regulations.
2. Every chain ring, hook shackle, swivel, level and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

Article -7:

1. Every crane driver or hoisting appliances operator shall be properly qualified .
2. No persons under the age of 21 years shall be in control of any hoisting machine including any scaffold which or give signals to the operator.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Article -8:

1. In the case of every hoisting machine and of every chaining hook shackle, level and pulley block used in hoisting or lowering or as a means of suspension the safe working load shall be ascertained by adequate means.
2. Every hoisting machine and all gear referred to above shall be plainly marked with the safe working load. In the case of hoisting machine having a variable safe working load each safe working load and the conditions under which it is applicable shall be clearly indicated.
3. No part of any hoisting machines of any gear referred to above in the preceding paragraphs shall be loaded beyond the safe working load except for the purpose of testing.

Article -9:

1. Motor gear, transmission, electric wiring and other dangerous parts of hoisting appliance shall be provided with efficient safe guards.
2. Hoisting appliances shall be provided with such mean as will request to a minimum the risk of the accidents.
3. Adequate precautions shall be taken to reduce to a minimum the risk of any part of a suspended load becoming accidentally display.

PART –III**GENERAL RULES, TO SAFETY EQUIPMENT AND FIRST AID:**

Article -10:

1. All necessary personal safety equipment shall be kept available for the use of the persons employed on the site and be maintained in a condition suitable for immediate use.
2. The workers shall be required to use the equipment provided and the employer shall take adequate steps to ensure proper use of the equipment by these concerned.

Article -11:

When work is carried on in proximity to any place where there is a risk of danger all necessary equipment shall be provided and kept ready for use and al necessary steps be taken for the prompt, reasons of any persons in danger.

Article -12:

Adequate provision shall be made for promptly first aid treatment of all injuries likely to be sustained during the course of the work.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Article -13:

Where large work places are situated in cities, town or in the sub-urban and no beds are considered necessary owing to the proximity of city or town hospital, suitable transport shall be provided to facilitate removal of urgent cases to hospital at other work places, some conveyance facilities such as care shall be kept readily available to taken injured persons or persons suddenly taken seriously ill to the nearest hospital.

ADDITIONAL CONDITION NO. V WATER AND LIGHTING.

The contractor shall pay all fees and provide water and light as required from Municipal Mains or other sources and shall pay charges therefore (including storage tanks meters etc.,), for the use of the work and workmen, unless otherwise arranged and decided on in writing with Executive Engineer. The water for the works shall be as far as practicable free from earthy, vegetable or organic matter and from salts of other substance likely to interfere with the setting of motor otherwise prove harmful for the work.

2. All items of works shall be done in accordance with the relevant Clause of TNBP and Addenda volume to the TNBP amended from time to time.

3. The contractor shall be responsible for the safe custody of all the departmental materials once they are handed over to the departmental stores. The cost of any materials in the custody of the contractor lost, stolen, destroyed, or damaged, will be recovered from the contractors at the issue rate.

4. For the testing of the concrete and aggregate, the contractor must procure the following equipments and make them available at site

i) Steel mould for making 5cm cubes of concrete. The mould will be in two halves for easy removal.

ii) Slump cone for testing consistency (slump test). The cone will be 30cm height truncated cone with top and bottom diameter for 10cm and 20 cm respectively. In addition, a steel rod 15cm diameter and 50cm length and wide tamping and rounded is to be procured.

iii) For finding fitness moulds, sand and coarse aggregate, hand operated sieve apparatus may be procured along weighing machine for weighting the aggregate sand.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

5. In the case of any breach of the terms of the contract, contract will be closed at the risk and costs of the contractor in addition to the forfeiture of the Earnest Money Deposit, Security Deposit.
6. The testing is to be done at the contractor's cost of building materials and also for concrete cubes.

ADDITIONAL CONDITION No. VI.

1. The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc., P.F., units wherever indicated are for guidance only.
2. Unless otherwise specified, all the rates quoted by the contractor shall be for works at all levels of building.
3. Rates for every item of work to be done under this contract shall be for all the lifts and leads, height, depths, lengths, and width except when specifically mentioned in the item ;otherwise nothing extra will be paid on this account.
4. The work shall be carried out as per drawings and designs supplied by department and as directed by the Engineer-in-Charge.
5. The rate for all items in which use of cement is involved is inclusive of charge for curing .
6. The contractor has to make his own arrangements for procuring water for construction purpose,. Construction and curing should be done with water free from injurious amounts or deleterious materials. Potable waters are generally considered satisfactory for curing, mixing concrete and masonry . However, the water to be used should be periodically tested at contractor's cost for its suitability for using in the construction work and got approved from the departmental Engineers.

ELECTRICITY.

7. The contractor should make his own arrangements for obtaining electricity for all types and use like lighting, welding, pumping, mosaic and marble polishing etc.
8. The contractor should submit the PERT chart for the programme of work on the date of taking over site.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

9. Any damage to work resulting from rains or from any other cause until those work is taken over by the department after completion will be made good by the contractor at his own cost.
10. The contractor shall have to work in cooperation with contractor for electrical works, sanitary and water supply and other items of works.
11. The contractor shall work in cooperation with electrical contractor while laying the conduit pipes and other electrical items for concealed wiring in RCC works.
12. The centering and form works shall be true rigid and adequately braced both horizontally and diagonally and leak proof. The form work should be sufficiently strong not only to withstand dead load and live load but also to withstand the effects of vibration. In all these cases, the standards as per I.S. code and TNBP should be followed. It should be specifically ensured that it is leak proof in joints.

ADDITIONAL CONDITION NO. VII.

SPECIFICATION FOR SANITARY FITTINGS., DRAINAGES, AND WATER SUPPLY ARRANGEMENTS.

1. Water closets, basins, urinals sinks and other sanitary wares shall be of approved make, as required in the relevant items. The fixing of these shall be in accordance with the special specifications.
2. The rates shall include all dismantlings, making holes in walls or slabs and restoring the structure to original condition after the completion of the work.
3. The work should be carried out with least hindrance to the adjoining buildings and the contractor shall be responsible for any damage caused to the existing fixtures, electric fittings etc., in the course of execution, and the contractor shall make good any such damage without claims for extra.
4. The rate for laying stoneware pipes shall include necessary incidental charges during execution of work and making good any damages to roads and other structures.
5. Rates for laying cast iron pipes and galvanised iron pipes (or) PVC pipes shall include fixing with wooden plugs, G.I. /C.I. clamps and screws where the pipes are fixed to walls.

The rates for G.I. pipes shall also include wrapping them with tarred straps where they are buried in earth, tarring the portion embedded in masonry and painting with white lead with two coats for portion above ground level.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

6. The clause for G.I. pipe fittings should be spaced at convenient places as directed. The wooden plugs for pipes and brackets fittings should be properly fixed in cement mortar 1:3 suitably in masonry with wide end of wedge shaped plugs inside and not hammered with them and into the walls the size of plugs should not be less than 25mm square at one end 40mm at the other end with a depth of not less than 75mm.
7. Painting with two coats of best white paint (or) any other colour approved by Executive Engineer over priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all other connections.
8. The contractor should employ sufficient number of qualified licensed plumbers with necessary experience and skill in the trade to the satisfaction of the Executive Engineer concerned for execution of water supply and sanitary items of works.
9. The contractor shall after laying of the pipes carry out the tests of the pipes, specials, joints and other fittings against leakage at his own cost according to the relevant I.S.I. to the fullest satisfaction of the departmental officers.
10. In the case of reinforced cement concrete or masonry water retaining structures, the contractor shall ensure that there is no leakage or dampness on the external faces of the structure. In the event of any above being noticed, the same shall be rectified by the contractor at his own cost, adopting standard approved methods of rectification to the fullest satisfaction of the departmental officers.

SUPPLYING AND FIXING INDIAN TYPE WATER CLOSETS.

1. The Indian type water closet shall be fixed in position at floor level in a bed concrete of brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and foot rest. The existing masonry structure after dismantling the foot making, holes etc., shall be restored to its original condition after completion of the work. The flooring around the closet shall be finished with cement mortar 1:3, 20mm thick with adequate slope all round for draining into the closet. The foot rests should be fixed at an angle as per standards.
2. The PVC flushing tanks shall be of three Gallons capacity of Indian make conforming to I.S.I. specification supported on G.I. brackets with necessary C.I. chain and handle for pull float ball value of 2 P.V.C. connection to the water main and closet including wiped with white glazed paint of 2" coats over a priming coat of red lead.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

3. The fixing of water closet shall include the dismantling of existing floor wherever necessary and making necessary holes in walls etc., and restoring the structure to original condition after completion of the work. The flushing tank and accessories will be fixed to the walls with necessary clamps and brackets in cement mortar 1:4.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

ADDITIONAL CONDITION FOR CONTRACTORS ' SPECIAL ATTENTION. NO. VIII.

As per clause 26 (1) 4 of General conditions of contract, the shrinkage period of six months referred to in main clause 26(1) will be one year in respect of all contract for construction of original buildings either semi permanent or permanent to ensure structural stability of the building and as per G.O.Ms.No. 283, P.W.(G2) Department, dated 21.5.1999..

As per clause 64 (1), the withheld amount of 2 ½ % from the final Bill in respect of contract for construction of original buildings will be retained by the Government for a total period of one year in lieu of two years period referred to in G.O.Ms.No. 1465, P.W. dated 22.7.1982 and will be released either on the expiry of one year period on executing an Indemnity bond by the contractor to the satisfaction of the Executive Engineer, for a further period of four years to ensure structural stability of the building under clause 20(1) and as per G.O. Ms. No. 283, P.W. (G2) Department, dated 21.5.1999.

ADDITIONAL CONDITION FOR CONTRACTORS ' SPECIAL ATTENTION. NO. IX.

The contractor is bound for recovery under Revenue Recovery Act for any liabilities under this contract.

If at any time the Executive Engineer shall be of the opinion that the contractor is delaying commencement of the work or violating any of the provisions in the Articles of Agreement, the Executive Engineer shall so advise the contractor in writing and at the same time demand compliance. If the contractor neglects to comply with such demand, within seven days after the receipt of such notice, it shall then or at any time thereafter, be lawful for the Executive Engineer to terminate the contract which termination shall carry with the forfeiture of the security deposit and total of the amount withheld from the final bill together with value of such work as may have been executed and not paid for such proportion of such total sum as shall be assessed by the Executive Engineer.

General specifications:

1. Cement concrete flooring tiles shall be manufactured from mixture of cement natural aggregates and colouring materials where required by pressured process. Fixing manufacture, the tiles shall be subjected to a pressure not less than 140kg/cm².

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

2. Proportion of cement to aggregate in the backing of the tiles shall be not less than 1:3 by weight.
3. On removal from mould, the tile shall be kept in moist continuously at least for 7 days and subsequently if necessary for such a longer period that would ensure their conformity to the requirements to Traverse strength resistance of wet and water absorption and would minimize shrinkage and cracking, tiles shall be stored under covers.
4. Tolerance : Tolerance on length and breadth shall be plus or minus one millimeter. Tolerance thickness shall be plus 5mm, the range of dimensions if any of one delivery of tiles shall not exceed 1mm., length and breadth and 3mm., on thickness.

5. THICKNESS OF WEARING LAYERS:

Class of tiles	Minimum thickness of wearing layer
Plain cement and plain coloured tiles general purpose.	3 mm
Plain cement and plain coloured tiles for heavy duty	6mm
(Mosaic) terrace tiles with chips of size varying from the smallest up to 6mm.	5mm
(Mosaic) terrace tiles with chips 12mm size ranging from the smallest up to 12mm, or ½"	5mm
(Mosaic) terrace tiles with chips of size varying from the smallest up to 20mm or ¾"	6mm

6. Colour and appearance: The colour and texture of the wearing layer shall be uniform through its thickness.
7. When specifying the tiles, the contractor should specifically indicate whether the chips to be used are from the smallest to 20mm, size. The officers of the department shall also specify size of chips by referring the approximate photograph given in Indian standard No. 1237/1959.
8. General quality of tiles

Unless otherwise required the wearing face of the terrace tiles shall be mechanically found and filled. The bearing face of the tiles shall be placed, free from projections, depression and cracks (Hair cracks not included) and shall be reasonably parallel to the back face of tiles. All angles shall be right angles and all edges shall be sharp and true.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

9. BREAKING TRAVERSE STRENGTH OF TILES SHALL BE GIVEN AS BELOW:

Size of tiles cm.	Span cm.	Breaking wet test cm. kg.	Land based dry test Kg
19.58x19.85	15	71	106
24.85x24.85	20	90	120
29.85x29.85	25	99	149

10. The average wet of not less than 12 specimens shall not exceed 2mm., and the weather any individual specimen shall not exceed 2.5cm., when tested in an abrasion testing machine.

11. The average percentage of water absorptions not less than six full tiles, specimen, shall not exceed than in the case of water absorption test.

12. The density of the tiles shall be in the order of around 2.4gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inches. The joints shall be filled with grey cement to match the finish of the tiles and shall be made almost invisible when the floor is given the final polish. The polishing shall be done by means of electric polisher wherever possible and hand polish to other places like vertical faces, or wall coves and other areas where the machines can have not access and glossy, surface as even as possible.

All angles at junction of vertical faces shall be rounded off to the 1½" radius with same quality of materials and colour of the tiles of the floor. But laid in situ and these coves shall be measured as part of flooring and paid for at the same rates and the flat floors. The colors of the tiles shall generally match other coloured face adjustment or as may be the directed by Executive Engineer.

The dadoing and skirting have to be finished by giving necessary faces in the brick wall itself so that the projection does not exceed ½" from the face of the wall tiles, the finish plastered surfaces.

Based on the modulus of rupture of 30kg sq m for dry test and two thirds of the value of wet test.

GUIDELINES FOR ADDITION OF STRENGTH GRADING OF CONCRETE:

Plain and reinforced concrete have been graded according to the cube compressive strength and designated as M100. M150. M200. M 250. M300 and M400 the designation of concrete the letter refers to the mix and the Number to the specified 28days work cube compressive strength of that mix expressed in Kg/cm².

Approximately the M.100 M150. M200 and M250 grades of concrete corresponds 1:3:6, 1:2:4 , 1:1½:3, 1:1:2 nominal mixes of ordinary concrete used.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

The proportion aggregate cement and water to be used for controlled concrete shall be designed by preliminary tests of materials to be actually used to obtain and specified strength with the use of minimum quantity of cement, however the maximum total quantity of aggregate by weight per 50kg of cement shall not normally exceed 450kg.

For any particular item, compressive strength required to be obtained by the concrete at 26days in the preliminary and works tests on the 15cm. cubes minimum cement concrete required to be used and the approximate proportions of approved fine and coarse aggregate shall be specified in the tender schedule. These particulars will be only for the guidance of the contractor for quoting rates.

Immediately upon the receipt of the award of the contract, contractor shall inform the Executive Engineer, the exact location of the source of the materials where he proposed to use and get the materials approved. The mix with the actual approved materials to be used shall be got designed in an approved laboratory by the contractor with minimum quantity of cement to the specified strength in the preliminary test and the proportions got approved from the Executive Engineer in writing. These proportions shall be used.

So long as the materials continue to be of the same quality and the same sources subject only to slight changes in the relative qualities of fine and coarse aggregate for the purpose of promoting workability provided the works tests also show the required strength.

If during the progress of work the contractor wishes to change the materials the proportion shall be mixed on the basis of fresh preliminary tests to give the required strength after the Executive Engineer is satisfied that the materials satisfy the specification. No adjustment of cost shall be made for change of proportions of cement fixed in the original preliminary tests.

PROPORTIONATE OF MIX:

Each batch of mix shall be proportioned to weight of cement fine aggregate and coarse aggregate water for each batch shall be added in quantity measured by volume or by weight, where weight of cement as determined by accepting the maker's weight per bag a reasonable number of bags shall be weighted separately to check net weight, where the cement is weighted on the site and not in bags its shall be weighted separately from the aggregates. All the weighting equipments shall be maintained in a clean and serviceable condition and their accuracy checked periodically.

Mixing:

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Mixing shall be done only by mechanical mixers. The quantities of the aggregate and water shall be adjusted duly in the field to compensate for bulkage due to the quantity of moisture present in the fine aggregate and free water in the coarse aggregate at the time of use.

TESTS:

Tests shall be got done in an approved laboratory at the cost of the contractor.

A. Preliminary tests

If concrete mixers are specified by its strength then the mix has to be designed and preliminary tests should be carried.

A preliminary test is conducted in a laboratory of the trial mix of concrete produced in the laboratory with the object of: -

- a. designing of concrete mix before the actual concrete operation starts.
- b. Determining the adjustments required in the designed mix or when there is change in the materials used during the execution of work.
- c. Verifying the strength of concrete mix.

B. works tests :

The test conducted either in the field or in a laboratory on the specimen made on the works out of concrete being used on the works.

The sampling shall be spread as evenly as possible throughout the day, when wide changes in weather conditions occur during concreting additional samples may be taken as desired by Executive Engineer.

All expenses on the tests shall be borne by the contractors nothing extra shall be paid to the contractor for carrying out the tests.

All samples for tests shall be taken in the presence of Assistant Executive Engineer concerned and the contractor or his authorized agent.

All mix design and test data and results shall be maintained as part of the record for the contract and shall be signed by the Assistant Executive Engineer and the contractor.

A register of cement concrete cubes cast and tested giving the following particulars shall be maintained at the site. In the Form prescribed as detailed below:

1. Name of the work and reference to agreement
2. Sl. No.
3. Date and time of sample taken

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

4. Sample No.
5. No. of cube
6. Identification works
7. Proportions of mix
8. Description of the portion of work represented by the sample and quantity of concrete represented by the sample.
9. Initials of Assistant Executive Engineer and contractors authorized agent in whose presence sample is taken.
10. Result of 7days test.
11. Result of 28 days test
12. Review remarks by Executive Engineer.

Extract of : IS 456 – 1964

4.2.2.1 : Plain and reinforced concrete shall be in seven graded designed M100, M150, M200, M250, M300, M350 and M400.

Note: in the designation of the concrete mix, letter M. refereed the mix., and the number to the specified 28 days works cube compressive strength of that mix expressed in kg/cm^2 .

4.2.2.2. Strength requirements of concrete

4.2.2.2.1 when a ordinary Portland cement conforming to accepted standards (vl.5) (21/2 is used the compressive strength requirements for various grades of concrete shall be as given in Table I. Where rapid hardening Portland cement is used the 20 days compressive, strength requirement specified in Table 1. Shall be met at 7days, where other cements are used the Engineer incharge shall specify the corresponding requirements preferably on the basis of preliminary tests.

*IS 269/1458 specification for ordinary rapid hardening and low heat Portland cement is 455/1962 specification for Portland blast slab cement.

4.2.2.2.2.3 strength requirements specified in Table 1 shall apply to both controlled concrete and ordinary concrete (Sec. 4.3.1) preliminary tests need not however be made in the Case of ordinary concrete.

1. In order to get a relatively quicker idea of the quality of concrete, optional works tests on beam for module or rupture at 72-2 hours of at 7days, or compressive strength tests at days may be carried out in additional to 28days compressive strength tests.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

In all cases, the 28days compressive strength specified in Table 1 shall alone in the criteria for acceptance or rejection of the concrete. If however, from tests carried out in a particular job over a reasonably long period it has been established to the satisfaction of the Engineer in charge that suitable ratio between the 28days compressive strength and the modulus of rupture at 72+2 hours or at 7 days or compressive strength at 8 days may be accepted the Engineer in charge may be suitably relax the frequency of 28 days compressive strength test specified in the table 5 provided the expected strength values at the specified early age are consistently met. For this purpose the values given in Table 2 may be taken for general guidance in the case of concrete made with ordinary cement.

b. where the strength of concrete mix, as indicated by tests, lies between strength for any two grades specified in Table 1. such concrete shall be classified for all purpose as a concrete belonging to the lower of the two grades between which its strength lies.

4.3 PROPORTIONING AND WORKS CONTROL

4.3.1 methods of proportioning the determination of preparations of cement aggregate and water to attain the required strength shall be made by one of the following.

- a. With preliminary tests by designing the concrete mix such concrete shall be called controlled – concrete.
- b. Without preliminary tests by accepting nominal concrete mixes such concrete shall be called “Ordinary Concrete”.

4.3.2.1 Controlled concrete:

4.3.2.1 As for as practicable, controlled concrete should be used on all concrete works, controlled concrete for use in plain and reinforced concrete structure shall be in grades M100, M150, M200, M250, M300, M350 and M400.

4.3.2.2 : The concrete mix shall be designed to have an average strength corresponding to the values specified for preliminary tests in Table.1. The proportions chosen should be such that the concrete inadequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum, total quality of aggregate by weight per 50kg of cement shall not exceed 450 kg except where otherwise specifically permitted by the Engineer in charge.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

4.3.2.3 Except where it can be shown to the satisfaction of the Engineer in charge that supply of properly grade aggregate of uniform quality can be maintained over the period of works the grading of aggregate should be controlled by obtaining, the course aggregate in different sizes and blending them in the right proportions when required, the different sizes being stocked in separate stock piles the materials should be stock piles several hours preferably a day before use. The grading of course and fine aggregate should be checked as frequently as possible the frequency for a given job being determined by the Engineer, in charge to ensure that the suppliers are maintaining the grading uniform with samples that of the samples used in the preliminary tests.

4.2.3.4 im-proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufactures weight per bag a reasonable number of bags, should be weighted separately to check the net weight. Where the cement is weighted on the site and not in bags, it should be weighted separately from the aggregates. Water should on either measured by volume in calibrated tanks (or) weighted all measuring equipments should be maintained in a clean serviceable condition and their accuracy periodically checked.

4.2.3.5 it is most important to maintain the water cement ratio constant at its correct value. To this end determination of moisture contents in both find and coarse aggregate should be made as frequency as possible the frequency for given job being determined by the Engineer in charge according to weather conditions the amount or the added water should be adjusted to compensate for any observed variations in the moisture contents. For the determination of moisture content in the aggregate is /2386 part III 1963. Methods of test for aggregate for concrete part III specific gravity, density, voids, absorption building, may be referred to allow for the variation in weight of aggregate due to variation their moisture content suitable adjustments in the weights of aggregates should also be made.

4.3.2.6 No substitution in materials used on the work for alterations in the established proportions except as permitted in 4.3.2.5 shall be made without additional tests to show that the quality and strength of concrete are satisfactory.

4.3.2.7 Workability of the concrete should be checked at frequent intervals, the slump test or where facilities exist, the compacting factor test – in accordance with IS-1199 and 1950 may be adopted for this propose.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

4.3.2.8 A competent person should be employed whose first duty will be to supervise all stage in the preparation and placing of the concrete. All works test specimen should be made and site tests carried out under his direct supervision.

4.3.3 Ordinary concrete:

4.3.3.1 Where it is considered not practicable to use controlled concrete ordinary concrete may be used for concrete of grades M100, M150, M200 and M250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with table III.

4.3.3.2 In proportioning concrete, the quantity of cement should be determined by weight. The quantities of fine & course aggregate may be determined by volume, but these should also preferably be determined by weight. In the latter case the weight should be determined from the volume specified in table III and the weight per litres of dry aggregate. If fine, aggregate is moist and volume batching is adopted. Allowances shall be made for bulking in accordance with IS.2386/ Part III -1963.

4.3.3.3. The water cement ratio shall not be more than these specified in Table III.

The cement concrete of the mix specified in Table III for any nominal mix may be increased and if the quantity of water in a mix may be increased to overcome the difficulties of placement and shall be compacted. However, the water cement ratio specified in Table III is not exceeded.

Note 1: In the case of Vibrated concrete, the limit specified may be suitably reduced to avoid segregation.

Note 2: The quantity of water used in the concrete mix for reinforced concrete work should be sufficient but should not be more than sufficient to produce a dense concrete of adequate workability for its purpose which will surround and properly grip, all the reinforcement workability of the concrete should be controlled by maintaining a water cement ratio that is found to give a concrete which is just sufficiently wet to be placed and compacted without difficulty with the means available.

4.3.3.4 Workability of the concrete should be controlled by directed measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test in accordance with IS 1199/1959 may be used as guide.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

4.3.3.5 Allowance should be made for surface water present in the aggregate when computing the water content, surface, water shall be determined by one of the field methods described in IS 2336/Part III 1963. In the absence of exact data the amount of surface water may be estimated from the values given in Table 4.

4.3.3.6 If ordinary concrete made in accordance with the proportions given for a particular grade does not yield the specified strength due to proper qualities of materials not being available such concrete shall be classified as belonging to the appropriate lower grade. Ordinary concrete proportioned for a given grade.

IS 2386 Method of test for aggregate for concrete

IS 2386 (Part. III) 1963 specific gravity.

Density works absorption and bulking.

In accordance with Table III shall not, however be placed in a higher grade on the ground that the test strength and are higher than the minimum specified no interpolation shall be permissible.

4.4 Sample size and acceptance criteria.

4.4.1 All tests shall be carried out in accordance with IS 516-1959.

4.4.2 The number of test specimen required the frequency of sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table V for both ordinary concrete and controlled concrete No preliminary tests are however necessary in the case of ordinary concrete.

TABLE -1 STRENGTH REQUIREMENT OF CONCRETE

CLAUSE 4.2.2.1 AND 4.2.2.2

All values in Kg/Cm².

Grade of concrete	Compressive strength of 15cm., cubes at 28days after mixing conducted in accordance with IS 516-1959	
	Preliminary test Min	Works test min
M.100	135	100
M.150	200	150
M.200	260	200
M.250	320	250
M.300	380	300
M.350	440	350
M.400	500	400

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Note 1: Preliminary Test : A test conducted in a laboratory on the trial mix of concrete produced in the laboratory with the object of

- a. Designing a concrete mix before the actual concreting operations starts.
- b. Determining the adjustments required in the designed mix when there is a change in the materials used during the execution (or)
- c. Verifying the strength of concrete mix

Note 2 : Works Table – All test conducted either in the field or in a laboratory in the specimens made on the works out of the concrete being used on the works.

Note 3: Sizes of Cubes – in the works test with the approval of the Engineer in charge 10cm cube as may be used in place of 15cm provided the maximum nominal size of aggregate does not exceed 20mm even the use of 15cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40mm size is required to be tested the size of cubes should specified by the Engineer in charge keeping in view that generally the length of size of the cube should be about four times the maximum nominal size of aggregate in the concrete constituting the cube specimen.

Note 4: Strengthening Rotation to size of cube

Where 10cm cubes are used the values obtained from tests, of 10cm cubes shall be reduced to the extent established by comparative preliminary tests with 10& 15cm. cubes or in the absence of such compressive test, by 10 percent of the value of determined from the tests in order to give the equivalent strength for 15cm., where cubes larger than 15cm are adopted generally modification is necessary unless otherwise specified by the engineer in charge.

Note 5: Cylinder strength:

Compressive strength tests may with approval of the engineer incharge be conducted on 15cm diameter and 30cm., high cylinders in accordance with IS-516-1959 instead if a cube, where cylinder strength figures are adopted the compressive strength figures given above shall be modified according to the formula, minimum cylinder compressive strength required 0.8 compressive strength specified 15cm cubes.

The central Road Research institute, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength concrete using ordinary Portland cements manufactured in the country in accordance with IS 269-1959.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

As a result of these, it has been considered advisable to give graphs showing the relationship between the compressive strength of concrete mixes with different water cement ratios and the 7 days compressive strength of cement tested in accordance with IS-269-1959. These graphs have been given in appendix as they would be of some assistance in obtaining the water cement ratio for trial mixes of concrete.

Table II : Optional work Test Requirement of Concrete:

(Clause 4.2.2.2 (a):

(All values in kg/cm².)

All test shall be conducted in accordance with IS : 516 – 1959

Grade of concrete	Compressive strength on 15cm cube min. at 7day	Modulus of rupture by beams test	
		At 72+2 Hours	At 7 Days
M.100	70	12	17
M.150	100	15	21
M.200	130	17	24
M.250	170	19	27
M.300	200	21	30
M.350	235	23	31
M.400	270	25	34

Note : Note 2 and 3 under tables I are also applicable to Table II

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Table III:
CONCRETE MIX PROPORTIONS
(clause 4-3-5)
ORDINARY CONCRETE

Grade of concrete	Total quantity of dry aggregate by volume per 50 kg of cement to be taken at the sum of the individual volume of fine and course aggregate mix	Proportion of fine aggregate to course aggregate	Quantity of water per 50 kg of cement mix
1	2	3	4
M.100	300	Generally 1:2 for fine aggregate to course aggregate by volume but subject to upper limit of 1:1½ and a lower limit of 1:3	34 Litres
M.150	220	-do-	32 Litres
M.200	160	-do-	30 Litres
M.250	100	-do-	27 Litres

Note 1: The proportion of the aggregate should be adjusted from upper limit of lower limit progressively as the grading of the fine aggregate become fine and the maximum size of course aggregate become larger.

Examples: For an average grading of fine aggregate that is zone II. I.S. 383/1963 the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10mm, 20mm and 40mm respectively.

Note 2: It may be noted for general guidance that M.100, M.150, M.200 and M. 250 of ordinary concrete corresponding approximately to 1:3:6, 1:2:4, 1:1½:3 and 1:1:2 nominal mixes of ordinary concrete currently used in the country.

Table IV: Surface with water carried by average aggregate :

Aggregate	Approximate quantity of surface water (M3)
(1)	(2)
Very wet sand	120
Moderately by wet sand	80
Moist sand	40
*Moist gravel or crushed rock	20 to 40

*Coarser the aggregate less the water it will carry.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

Table IV: Preliminary Test : WORK TEST
ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADE)

Minimum No. of specimens from each batch (cubes)		Minimum Frequency	Criteria for acceptance	Minimum No. of specimens taken from the same days				Minimum Frequency		Criteria for acceptance
				Cubes		Beams				
7days compressive strength test as optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	25 days compressive strength test	72+2 Hours test as an optional test if desired	7 days test as an optional test if desired	In terms of the quality of concrete	In terms of period	
1	2	3	4	5	6	7	8	9	10	11
5	5	For each batch with a minimum of three samples	Accept for if average compressive strength of the specimen tested is not less than the compressive strength specified in Table –I (For Optional tests See Table-2) subject to the condition that only one out of six consecutive test may give a value less than specified strength	3	3	3	3	For every 150 cubic meter of concrete or part thereof	At such intervals as the Engineer in charge, may decide. However in the case of concrete sample shall be drawn on each day for the first four day of concreting and there after at least once in seven days of concreting .	Accepted to average strength of the specimen test is not less than the strength specified Table –I (For optional test see Table-2) subject to the condition that only one out of three consecutive test may give a value less than 90% specified strength.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

1	2	3	4	5	6	7	8	9	10	11
-- -	10	For each batch with a minimum of three samples	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table-I subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table-I, by at least the value of standard deviation* of the series of the test	5	5	5	5	For every 150 cubic metre of concrete or part thereof	Once in 7 days of concreting All such intervals as the Engineer in charge may decided. However in the case of controlled concrete samples shall be drawn on each day for the first four days of the concreting and there after at least one seven days of concreting	Strength but this shall not be less than 90% for the specified strength Accept if average strength of the specimen tested is not less than strength specified in Table-I (For optional tests see Table-2) subject to the condition the one out of five consecutive tests may give a value less than the specified strength.

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

PUBLIC WORKS DEPARTMENT
CHIEF ENGINEER PWD, TECHNICAL EDUCATION CIRCLE, CHENNAI - 25

SECTION . V. .

SCHEDULE – A

Schedule of rates and approximate quantities

1. The quantities here given are those upon which the lump sum tender cost of the work is based but they are subject to alterations, 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. The unit rates noted below are the governing payment for extra or deductions for omissions according to the conditions of the contract as set forth in the general conditions of contract of TNBP and other condition conditions (or) specifications of this contract.

2. it is to be expressly understood that the measured work is to be taken that (Not withstanding 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 Executive Engineer and cost calculated by measurement or weight at the respective prices, without any additional charge for any necessary and contingent works connected therewith. The rates quoted are for works in site and complete in every respect.

Item No.	Probable quantity. (In figures and words)	Descrip tion of work	TNBP No	Rate (In figures and words)	Unit (In figures and words)	Amount (figures) Rs. P
		Vide separate schedule attached				

Signature of Contractor :

Issued to
.....on.....

Contractor

Sd/-
Chief Engineer, P.W.D.,
Technical Education Circle,
Chennai - 25

<u>Price Tender Qualification document to be submitted by the Tenderer</u>		
Sl.No	Salient criteria	Details furnished by the Tenderer
1)	The applicant should be a Registered Civil Contractor of Tamil Nadu State PWD under Class I as per revised classification with money limit above Rs.75.00 Lakhs.	
2)	Live Certificate 2021-22	
3)	Income Tax Clearance Certificate and its validity latest month	
4)	GST Registration No and GST Final Clearance Statement latest month	
5)	Previous civil work experience certificate in Tamil Nadu State Government, P.W.D the certificate issued by Executive Engineer (With in 5 Year)	
6)	Electrical tie-up	
	i) The applicant should be a Registered Electrical Contractor of Tamil Nadu State P.W.D with money limit	
	ii)Live Certificate 2019-2020	
	iii)Electrical Board License – EA and ESB current validity	
	iv)Previous Electrical work experience certificate in Tamil Nadu State Government, P.W.D the certificate issued by Executive Engineer (With in 5 Year)	
8)	Technical Assistant details	
	ii) More than 50.00 Lakhs and above	
	1.One B.E. (Civil) or equivalent degree holder with three years experience or not less than one retired Assistant Executive Engineer. AND 2.One B.E. (Civil) or equivalent degree holder AND 3.One more diploma holder in Civil OR One retired Junior Engineer	

Contractor

Sd/-
 Chief Engineer, P.W.D.,
 Technical Education Circle,
 Chennai - 25