CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT VIRALIYUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VIRALIYUR MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.12,000/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

1. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

2. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4.Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.12,000/- (Rupees Twelve thousand only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

a) Test, Inspection and rejection of defective materials and work.
b) Carriage
c) Accidents
d) Delays
e) Sanction on particulars of payments
f) Construction Plant
g) Water and lighting and
h) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

1. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

1. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

2. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

3. The contractor shall not enter the private land without written understanding of the owner.
4. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

5. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

6. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

7. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

1) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.
2) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.
3) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.
4) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

11. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

    b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

12. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

    b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

    c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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13. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
14. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
15. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
16. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
17. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
18. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
19. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
20. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
21. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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22. The tenderer shall pay royalty or charges due for use of private quarries and private land.
23. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
24. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

a) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

b) Where drinking water is obtained from an intermittent public water supply each work place shall be provide 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 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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d) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

1. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
2. A scaffold shall not be constructed, taken down, or subsequently altered except.
   a) Under the supervision of a competent and responsible person and;
   b) By competent workers possessing adequate experience in this kind of work.
3. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
4. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
5. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
6. A competent person shall periodically inspect scaffolds.

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7. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

1. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

a) Be so constructed and maintained to obviate from risks of persons tripping or slipping
b) Be kept free from any unnecessary obstructions.
c) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

1. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
2. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
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 working platform and other working places.
2. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
3. Every place where work is carried on the mean of approach there to shall be adequately lighted.
4. Adequate precautions shall be taken to prevent danger from electrical equipment.
5. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

1. Hoisting machines and tackle including their attachments enhotages and supports shall.
   a) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   b) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

1. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
2. Every chain ring, hook shackle, swivels, 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 an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

1. In the case of every hoisting machine and every chain ring, hook shackle, swivel 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. 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. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
4. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

1. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
2. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
3. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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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 thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

1. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
2. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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3. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

4. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

5. The rates quoted by the tenderer should include all de-watering charges.

6. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

7. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

8. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

9. The tenderer will be paid only for finished items of works.

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10. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

11. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
12. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
13. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

a) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.
b) The blasted rock materials stacked, measured, and paid for shall become property of the Department.
c) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

4.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 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 beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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2. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion 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 adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

a. Designing a concrete mix, before the actual concreting operation starts.
b. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or
c. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

1. Clean river sand shall be used in all cases.
2. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
3. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
4. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
5. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
6. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
7. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
8. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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9. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

10. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

1. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
2. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

   ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

   iii). All cement concrete for RC works shall be machine mixed and vibrated.

   iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

1. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
2. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
3. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
4. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
5. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
6. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
7. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
8. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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9. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
10. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
11. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

a) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).
b) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.
c) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.
d) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.
e) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.
f) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).
g) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.
h) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.
i) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

1. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
2. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
3. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

1. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
2. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
3. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
4. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
5. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT VIRALIYUR MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	160	Viswanathapuri
2	Rough stone for masonry works	45	Madukkarai
3	Bond stones	45	Madukkarai
4	HBGS Jelly (ISS) machine crushed / hand broken	45	Madukkarai
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	25	Kanuvai
7	Brick Jelly	25	Kanuvai
8	Lime stone	25	Coimbatore
9	Pressed tiles 23 x 23 x 2 cm	25	Coimbatore
10	Cement & Steel	25	Coimbatore

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VIRALIYUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VIRALIYUR MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Viraliyur MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Viraliyur MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT PICHANUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT PICHANUR MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,800/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

3. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

4. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4.Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,800/- (Rupees Eleven thousand eight hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

Signature of the Contractor

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4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

i) Test, Inspection and rejection of defective materials and work.
j) Carriage
k) Accidents
l) Delays
m) Sanction on particulars of payments
n) Construction Plant
o) Water and lighting and
p) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

2. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

4.13 PENALTY:

Signature of the Contractor

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

8. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

9. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

10. The contractor shall not enter the private land without written understanding of the owner.
11. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

12. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

13. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

14. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

5) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.
6) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.
7) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.
8) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

25. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

    b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

26. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

    b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

    c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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27. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
28. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
29. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
30. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
31. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
32. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
33. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
34. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
35. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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36. The tenderer shall pay royalty or charges due for use of private quarries and private land.
37. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
38. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

e) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

f) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

g) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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h) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

8. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
9. A scaffold shall not be constructed, taken down, or subsequently altered except.
   c) Under the supervision of a competent and responsible person and;
   d) By competent workers possessing adequate experience in this kind of work.
10. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
11. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
12. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
13. A competent person shall periodically inspect scaffolds.

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14. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

2. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

d) Be so constructed and maintained to obviate from risks of persons tripping or slipping

e) Be kept free from any unnecessary obstructions.

f) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

4. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
5. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
6. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

6. Safe means of access shall be provided to all working platform and other working places.
7. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
8. Every place where work is carried on the mean of approach there to shall be adequately lighted.
9. Adequate precautions shall be taken to prevent danger from electrical equipment.
10. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

2. Hoisting machines and tackle including their attachments enhotages and supports shall.
   c) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   d) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

3. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
4. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

3. Every Crane driver or hoisting appliances operator shall be properly qualified.
4. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

5. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
6. 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.
7. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
8. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

4. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
5. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
6. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

3. 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.
4. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

14. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
15. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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16. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

17. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

18. The rates quoted by the tenderer should include all de-watering charges.

19. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

20. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

21. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

22. The tenderer will be paid only for finished items of works.

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23. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

24. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
25. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
26. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

d) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.
e) The blasted rock materials stacked, measured, and paid for shall become property of the Department.
f) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

8.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

3. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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4. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

c. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.
d. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

d. Designing a concrete mix, before the actual concreting operation starts.
e. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or
f. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

11. Clean river sand shall be used in all cases.
12. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
13. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
14. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
15. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
16. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
17. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
18. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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19. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

20. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

3. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
4. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

   ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

   iii). All cement concrete for RC works shall be machine mixed and vibrated.

   iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

12. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
13. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
14. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
15. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
16. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
17. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
18. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
19. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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20. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
21. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
22. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the

tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

j) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

k) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

l) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

m) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

n) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

o) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

p) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

q) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

r) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

4. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
5. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
6. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

6. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
7. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
8. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
9. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
10. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT PICHANUR MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	162	Viswanathapuri
2	Rough stone for masonry works	5	Local
3	Bond stones	5	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	5	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	40	Kanuvai
7	Brick Jelly	40	Kanuvai
8	Lime stone	20	Local
9	Pressed tiles 23 x 23 x 2 cm	20	Local
10	Cement & Steel	22	Ukkadam

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT PICHANUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT PICHANUR MPCS, COIMBATORE DISTRICT

INDEX OF CONTENTS

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Pichanur MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Pichanur MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		$1m^2$ (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		$1m^2$ (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VADAKKUKADU MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VADAKKUKADU MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,700/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Vadakkukadu MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Vadakkukadu MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Vadakkukadu MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Vadakkukadu MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Vadakkukadu MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

5. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

6. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4.Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,700/- (Rupees Eleven Thousand Seven Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

q) Test, Inspection and rejection of defective materials and work.
r) Carriage
s) Accidents
t) Delays
u) Sanction on particulars of payments
v) Construction Plant
w) Water and lighting and
x) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

3. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

15. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

16. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

17. The contractor shall not enter the private land without written understanding of the owner.
18. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

19. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

20. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

21. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

9) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

10) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

11) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

12) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

39. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

40. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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41. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
42. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
43. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
44. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
45. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
46. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
47. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
48. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
49. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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50. The tenderer shall pay royalty or charges due for use of private quarries and private land.
51. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
52. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

i) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

j) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

k) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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l) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

15. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
16. A scaffold shall not be constructed, taken down, or subsequently altered except.
    e) Under the supervision of a competent and responsible person and;
    f) By competent workers possessing adequate experience in this kind of work.
17. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
18. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
19. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
20. A competent person shall periodically inspect scaffolds.

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21. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

3. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

g) Be so constructed and maintained to obviate from risks of persons tripping or slipping

h) Be kept free from any unnecessary obstructions.

i) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

7. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
8. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
9. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

11. Safe means of access shall be provided to all working platform and other working places.
12. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
13. Every place where work is carried on the mean of approach there to shall be adequately lighted.
14. Adequate precautions shall be taken to prevent danger from electrical equipment.
15. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

3. Hoisting machines and tackle including their attachments enhotages and supports shall.
   e) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   f) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

5. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
6. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

5. Every Crane driver or hoisting appliances operator shall be properly qualified.
6. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

9. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
10. 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.
11. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
12. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

7. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
8. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
9. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

5. 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.
6. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

27. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
28. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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29. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

30. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

31. The rates quoted by the tenderer should include all de-watering charges.

32. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

33. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

34. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

35. The tenderer will be paid only for finished items of works.

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36. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

37. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
38. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
39. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

g) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

h) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

i) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

12.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

5. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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6. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

e. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

f. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

g. Designing a concrete mix, before the actual concreting operation starts.
h. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or
i. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

21. Clean river sand shall be used in all cases.
22. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
23. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
24. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
25. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
26. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
27. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
28. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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29. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

30. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

5. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
6. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

   ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

   iii). All cement concrete for RC works shall be machine mixed and vibrated.

   iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

23. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
24. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
25. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
26. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
27. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
28. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
29. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
30. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

31. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
32. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
33. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

s) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

t) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

u) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

v) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

w) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

x) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

y) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

z) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

aa) The rate for all item in which use of cement is involved is inclusive of charges for curing.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

7. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
8. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
9. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

In case the Union provides the power supply, it shall be on the following conditions:

11. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
12. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
13. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
14. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
15. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT VADAKKUKADU MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	160	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	10	Local
7	Brick Jelly	10	Local
8	Lime stone	20	Local
9	Pressed tiles 23 x 23 x 2 cm	20	Local
10	Cement & Steel	20	Pollachi

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VADAKKUKADU MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT VADAKKUKADU MPCS, COIMBATORE DISTRICT

Signature of the Contractor

INDEX OF CONTENTS

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Vadakkukadu MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Vadakkukadu MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KALLIPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KALLIPALAYAM MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,700/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

7. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

8. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4.Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,700/- (Rupees Eleven Thousand Seven Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

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4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

y) Test, Inspection and rejection of defective materials and work.
z) Carriage
aa) Accidents
bb) Delays
cc) Sanction on particulars of payments
dd) Construction Plant
ee) Water and lighting and
ff) Cleaning up during progress and for delivery.

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4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

4. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

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11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

22. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

23. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

24. The contractor shall not enter the private land without written understanding of the owner.
25. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

26. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

27. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

28. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

13) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

14) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

15) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

16) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

53. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

54. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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55. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
56. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
57. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
58. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
59. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
60. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
61. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
62. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
63. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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64. The tenderer shall pay royalty or charges due for use of private quarries and private land.
65. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
66. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

m) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

n) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

o) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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p) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

22. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
23. A scaffold shall not be constructed, taken down, or subsequently altered except.
    g) Under the supervision of a competent and responsible person and;
    h) By competent workers possessing adequate experience in this kind of work.
24. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
25. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
26. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
27. A competent person shall periodically inspect scaffolds.

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28. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

4. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

j) Be so constructed and maintained to obviate from risks of persons tripping or slipping

k) Be kept free from any unnecessary obstructions.

l) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

10. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
11. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
12. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

16. Safe means of access shall be provided to all working platform and other working places.
17. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
18. Every place where work is carried on the mean of approach there to shall be adequately lighted.
19. Adequate precautions shall be taken to prevent danger from electrical equipment.
20. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

4. Hoisting machines and tackle including their attachments enhotages and supports shall.
   g) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   h) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

7. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
8. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

7. Every Crane driver or hoisting appliances operator shall be properly qualified.
8. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

13. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
14. 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.
15. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
16. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

10. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
11. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
12. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

7. 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.
8. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

40. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
41. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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42. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

43. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

44. The rates quoted by the tenderer should include all de-watering charges.

45. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

46. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

47. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

48. The tenderer will be paid only for finished items of works.

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49. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

50. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
51. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
52. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

j) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

k) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

l) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

16.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

7. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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8. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

g. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.
h. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

j. Designing a concrete mix, before the actual concreting operation starts.

k. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

l. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

31. Clean river sand shall be used in all cases.
32. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
33. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
34. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
35. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
36. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
37. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
38. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

39. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

40. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

7. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
8. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

   ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

   iii). All cement concrete for RC works shall be machine mixed and vibrated.

   iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

34. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
35. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
36. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
37. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
38. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
39. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
40. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
41. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

SIGNATURE OF THE CONTRACTOR

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42. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
43. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
44. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

SIGNATURE OF THE CONTRACTOR

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

bb) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

cc) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

dd) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

ee) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

ff) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

gg) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

hh) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

ii) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

jj) The rate for all item in which use of cement is involved is inclusive of charges for curing.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

10. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
11. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
12. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

16. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
17. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
18. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
19. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
20. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT KALLIPALAYAM MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	140	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	22	Kanuvai
7	Brick Jelly	22	Kanuvai
8	Lime stone	10	Local
9	Pressed tiles 23 x 23 x 2 cm	10	Local
10	Cement & Steel	10	Local

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KALLIPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KALLIPALAYAM MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Kallipalayam MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Kallipalayam MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		1m^2 (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		1m^2 (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THERAMPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THERAMPALAYAM MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,700/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Therampalayam MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Therampalayam MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Therampalayam MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Therampalayam MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Therampalayam MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

9. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

10. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,700/- (Rupees Eleven Thousand Seven Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

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4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

gg) Test, Inspection and rejection of defective materials and work.
hh) Carriage
ii) Accidents
jj) Delays
kk) Sanction on particulars of payments
ll) Construction Plant
mm) Water and lighting and
nn) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

5. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

29. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

30. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

31. The contractor shall not enter the private land without written understanding of the owner.
32. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

33. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

34. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

35. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

17) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

18) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

19) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

20) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

67. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

68. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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69. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
70. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
71. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
72. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
73. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
74. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
75. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
76. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
77. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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78. The tenderer shall pay royalty or charges due for use of private quarries and private land.
79. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
80. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

q) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

r) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

s) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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t) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

29. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
30. A scaffold shall not be constructed, taken down, or subsequently altered except.
    i) Under the supervision of a competent and responsible person and;
    j) By competent workers possessing adequate experience in this kind of work.
31. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
32. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
33. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
34. A competent person shall periodically inspect scaffolds.

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35. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

5. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

m) Be so constructed and maintained to obviate from risks of persons tripping or slipping

n) Be kept free from any unnecessary obstructions.

o) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

13. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
14. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
15. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

21. Safe means of access shall be provided to all working platform and other working places.
22. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
23. Every place where work is carried on the mean of approach there to shall be adequately lighted.
24. Adequate precautions shall be taken to prevent danger from electrical equipment.
25. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

5. Hoisting machines and tackle including their attachments enhotages and supports shall.
   i) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   j) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

9. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
10. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

9. Every Crane driver or hoisting appliances operator shall be properly qualified.
10. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

17. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
18. 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.
19. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
20. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

13. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
14. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
15. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

9. 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.
10. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

53. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
54. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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55. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

56. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

57. The rates quoted by the tenderer should include all de-watering charges.

58. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

59. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

60. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

61. The tenderer will be paid only for finished items of works.

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62. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

63. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
64. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
65. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

m) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

n) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

o) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

20.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

9. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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10. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

i. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

j. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

m. Designing a concrete mix, before the actual concreting operation starts.

n. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

o. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

41. Clean river sand shall be used in all cases.
42. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
43. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
44. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
45. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
46. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
47. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
48. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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49. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

50. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

9. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
10. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

45. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
46. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
47. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
48. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
49. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
50. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
51. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
52. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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53. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
54. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
55. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

kk) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

ll) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

mm) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

nn) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

oo) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

pp) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

qq) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

rr) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

ss) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

13. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
14. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
15. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

21. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
22. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
23. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
24. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
25. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT THERAMPALAYAM MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	140	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	35	Kanuvai
7	Brick Jelly	35	Kanuvai
8	Lime stone	10	Mettupalayam
9	Pressed tiles 23 x 23 x 2 cm	10	Mettupalayam
10	Cement & Steel	10	Mettupalayam

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THERAMPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THERAMPALAYAM MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Therampalayam MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Therampalayam MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SAMBARAVALLI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SAMBARAVALLI MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,800/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Sambaravalli MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Sambaravalli MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Sambaravalli MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Sambaravalli MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Sambaravalli MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

11. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

12. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,800/- (Rupees Eleven Thousand Eight Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

oo) Test, Inspection and rejection of defective materials and work.
pp) Carriage
qq) Accidents
rr) Delays
ss) Sanction on particulars of payments
tt) Construction Plant
uu) Water and lighting and
vv) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

6. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

36. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

37. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

38. The contractor shall not enter the private land without written understanding of the owner.
39. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

40. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

41. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

42. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

21) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

22) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

23) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

24) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

81. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

82. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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83. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
84. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
85. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
86. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
87. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
88. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
89. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
90. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
91. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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92. The tenderer shall pay royalty or charges due for use of private quarries and private land.
93. The tenderer shall form his own approach road to the work site for which no extra will be due to him. On completion of work, the tenderer shall not be permitted to remove the materials laid for formation of road. If the tenderer is allowed to use the existing roads, he shall maintain them in good condition at his own cost throughout the period of the contract.
94. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

u) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

v) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

w) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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x) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

36. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
37. A scaffold shall not be constructed, taken down, or subsequently altered except.
    k) Under the supervision of a competent and responsible person and;
    l) By competent workers possessing adequate experience in this kind of work.
38. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
39. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
40. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
41. A competent person shall periodically inspect scaffolds.

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42. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

6. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

p) Be so constructed and maintained to obviate from risks of persons tripping or slipping

q) Be kept free from any unnecessary obstructions.

r) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

16. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
17. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
18. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

26. Safe means of access shall be provided to all working platform and other working places.
27. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
28. Every place where work is carried on the mean of approach there to shall be adequately lighted.
29. Adequate precautions shall be taken to prevent danger from electrical equipment.
30. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

6. Hoisting machines and tackle including their attachments enhotages and supports shall.
   k) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   l) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

11. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
12. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

11. Every Crane driver or hoisting appliances operator shall be properly qualified.
12. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

21. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
22. 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.
23. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
24. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

16. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
17. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
18. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

11. 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.
12. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

66. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
67. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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68. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

69. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

70. The rates quoted by the tenderer should include all de-watering charges.

71. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

72. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

73. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

74. The tenderer will be paid only for finished items of works.

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75. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

76. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
77. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
78. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

p) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

q) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

r) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

24.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

11. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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12. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

k. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

l. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

p. Designing a concrete mix, before the actual concreting operation starts.

q. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

r. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

51. Clean river sand shall be used in all cases.
52. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
53. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
54. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
55. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
56. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
57. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
58. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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59. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

60. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

11. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
12. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

56. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
57. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
58. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
59. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
60. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
61. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
62. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
63. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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64. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
65. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
66. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

tt) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

uu) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

vv) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

ww) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

xx) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

yy) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

zz) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

aaa) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

bbb) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

16. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
17. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
18. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

26. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
27. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
28. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
29. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
30. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT SAMBARAVALLI MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	140	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	60	Kanuvai
7	Brick Jelly	60	Kanuvai
8	Lime stone	20	Mettupalayam
9	Pressed tiles 23 x 23 x 2 cm	20	Mettupalayam
10	Cement & Steel	20	Mettupalayam

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SAMBARAVALLI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SAMBARAVALLI MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Sambaravalli MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Sambaravalli MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT BHAGAVATHIPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT BHAGAVATHIPALAYAM MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,700/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

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1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Bhagavathipalayam MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bhagavathipalayam MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bhagavathipalayam MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bhagavathipalayam MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Bhagavathipalayam MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

13. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

14. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,700/- (Rupees Eleven Thousand Seven Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

ww) Test, Inspection and rejection of defective materials and work.
xx) Carriage
yy) Accidents
zz) Delays
aaa) Sanction on particulars of payments
bbb) Construction Plant
ccc) Water and lighting and
ddd) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

7. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

43. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

44. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

45. The contractor shall not enter the private land without written understanding of the owner.

46. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

47. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

48. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

49. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

25) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

26) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

27) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

28) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

95. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

96. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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97. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.
98. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.
99. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.
100. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.
101. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.
102. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.
103. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.
104. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.
105. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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106. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

108. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

y) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

z) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

aa) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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bb) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

43. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
44. A scaffold shall not be constructed, taken down, or subsequently altered except.
    m) Under the supervision of a competent and responsible person and;
    n) By competent workers possessing adequate experience in this kind of work.
45. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
46. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
47. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
48. A competent person shall periodically inspect scaffolds.

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49. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

7. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

s) Be so constructed and maintained to obviate from risks of persons tripping or slipping

t) Be kept free from any unnecessary obstructions.

u) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

19. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
20. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
21. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

31. Safe means of access shall be provided to all working platform and other working places.
32. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
33. Every place where work is carried on the mean of approach there to shall be adequately lighted.
34. Adequate precautions shall be taken to prevent danger from electrical equipment.
35. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

7. Hoisting machines and tackle including their attachments enhotages and supports shall.

   m) be of good mechanical construction sound materials and adequate strength and free from patent defects and

   n) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

13. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
14. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

13. Every Crane driver or hoisting appliances operator shall be properly qualified.
14. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

25. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
26. 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.
27. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
28. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

19. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
20. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
21. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

13. 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.
14. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

79. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
80. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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81. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

82. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

83. The rates quoted by the tenderer should include all de-watering charges.

84. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

85. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

86. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

87. The tenderer will be paid only for finished items of works.

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88. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

89. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).
90. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.
91. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

    i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

    ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

s) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

t) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

u) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

28.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

13. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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14. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

m. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

n. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

s. Designing a concrete mix, before the actual concreting operation starts.

t. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

u. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

61. Clean river sand shall be used in all cases.
62. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
63. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
64. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
65. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
66. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
67. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
68. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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69. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

70. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

13. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
14. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

67. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
68. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
69. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
70. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
71. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
72. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
73. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
74. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

75. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
76. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
77. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

ccc) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

ddd) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

eee) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

fff) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

ggg) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

hhh) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

iii) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

jjj) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

kkk) The rate for all item in which use of cement is involved is inclusive of charges for curing.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

19. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
20. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
21. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

In case the Union provides the power supply, it shall be on the following conditions:

31. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
32. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
33. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
34. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
35. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT BHAGAVATHIPALAYAM MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	150	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	15	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	10	Local
7	Brick Jelly	10	Local
8	Lime stone	15	Local
9	Pressed tiles 23 x 23 x 2 cm	15	Local
10	Cement & Steel	15	Local

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BHAGAVATHIPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BHAGAVATHIPALAYAM MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Bhagavathipalayam MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Bhagavathipalayam MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		1m^2 (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		1m^2 (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT CHINNAPPAMPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT CHINNAPPAMPALAYAM MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,700/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Chinnappampalayam MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Chinnappampalayam MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Chinnappampalayam MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Chinnappampalayam MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Chinnappampalayam MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

15. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

16. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,700/- (Rupees Eleven Thousand Seven Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

eee) Test, Inspection and rejection of defective materials and work.
fff) Carriage
ggg) Accidents
hhh) Delays
iii) Sanction on particulars of payments
jjj) Construction Plant
kkk) Water and lighting and
lll) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

8. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

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11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

50. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

51. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

52. The contractor shall not enter the private land without written understanding of the owner.
53. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

54. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

55. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

56. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

29) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

30) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

31) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

32) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

109. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

110. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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111. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

112. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

113. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

114. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

115. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

116. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

117. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

118. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

119. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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120. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

122. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25. The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.
26. When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.
27. Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

cc) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

dd) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

ee) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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ff) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

50. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
51. A scaffold shall not be constructed, taken down, or subsequently altered except.
    o) Under the supervision of a competent and responsible person and;
    p) By competent workers possessing adequate experience in this kind of work.
52. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
53. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
54. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
55. A competent person shall periodically inspect scaffolds.

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56. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

8. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

v) Be so constructed and maintained to obviate from risks of persons tripping or slipping

w) Be kept free from any unnecessary obstructions.

x) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

22. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
23. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
24. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

36. Safe means of access shall be provided to all working platform and other working places.
37. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
38. Every place where work is carried on the mean of approach there to shall be adequately lighted.
39. Adequate precautions shall be taken to prevent danger from electrical equipment.
40. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

8. Hoisting machines and tackle including their attachments enhotages and supports shall.
   o) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   p) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

15. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
16. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

15. Every Crane driver or hoisting appliances operator shall be properly qualified.
16. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

29. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
30. 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.
31. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
32. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

22. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
23. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
24. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

15. 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.
16. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

92. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.
93. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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94. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

95. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

96. The rates quoted by the tenderer should include all de-watering charges.

97. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

98. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

99. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

100. The tenderer will be paid only for finished items of works.

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101. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

102. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

103. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

104. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

v) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

w) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

x) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

32.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

15. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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16. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

o. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

p. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

v. Designing a concrete mix, before the actual concreting operation starts.
w. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or
x. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

71. Clean river sand shall be used in all cases.
72. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
73. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
74. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
75. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
76. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
77. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
78. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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79. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

80. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

15. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
16. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

78. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
79. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
80. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
81. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
82. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
83. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
84. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
85. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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86. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
87. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
88. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

lll) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

mmm) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

nnn) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

ooo) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

ppp) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

qqq) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

rrr) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

sss) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

ttt) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

22. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
23. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
24. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

36. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
37. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
38. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
39. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
40. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT CHINNAPPAMPALAYAM MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	150	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	15	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	10	Local
7	Brick Jelly	10	Local
8	Lime stone	15	Local
9	Pressed tiles 23 x 23 x 2 cm	15	Local
10	Cement & Steel	15	Local

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT CHINNAPPAMPALAYAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT CHINNAPPAMPALAYAM MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Chinnappampalayam MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Chinnappampalayam MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THONDAMUTHUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THONDAMUTHUR MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,800/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

17. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

18. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,800/- (Rupees Eleven Thousand Eight Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

mmm) Test, Inspection and rejection of defective materials and work.
nnn) Carriage
ooo) Accidents
ppp) Delays
qqq) Sanction on particulars of payments
rrr) Construction Plant
sss) Water and lighting and
ttt) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

9. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

57. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

58. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

59. The contractor shall not enter the private land without written understanding of the owner.
60. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

61. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

62. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

63. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

33) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

34) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

35) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

36) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

123. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

124. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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125. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

126. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

127. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

128. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

129. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

130. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

131. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

132. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

133. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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134. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

136. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25. The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.
26. When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.
27. Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

gg) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

hh) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

ii) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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jj) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

57. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
58. A scaffold shall not be constructed, taken down, or subsequently altered except.
    q) Under the supervision of a competent and responsible person and;
    r) By competent workers possessing adequate experience in this kind of work.
59. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
60. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
61. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
62. A competent person shall periodically inspect scaffolds.

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63. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

9. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

y) Be so constructed and maintained to obviate from risks of persons tripping or slipping

z) Be kept free from any unnecessary obstructions.

aa) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

25. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
26. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
27. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

41. Safe means of access shall be provided to all working platform and other working places.
42. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
43. Every place where work is carried on the mean of approach there to shall be adequately lighted.
44. Adequate precautions shall be taken to prevent danger from electrical equipment.
45. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

9. Hoisting machines and tackle including their attachments enhotages and supports shall.
   q) be of good mechanical construction sound materials and adequate strength and free from patent defects and
   r) be kept in good repair and in good working order.

   Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

17. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
18. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

17. Every Crane driver or hoisting appliances operator shall be properly qualified.
18. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

33. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
34. 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.
35. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
36. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

25. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
26. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
27. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

17. 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.
18. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

105. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

106. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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107. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

108. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

109. The rates quoted by the tenderer should include all de-watering charges.

110. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

111. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

112. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

113. The tenderer will be paid only for finished items of works.

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114. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

115. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

116. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

117. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

y) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

z) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

aa) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

36.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

17. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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18. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

q. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.
r. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

y. Designing a concrete mix, before the actual concreting operation starts.

z. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

aa. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

81. Clean river sand shall be used in all cases.
82. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
83. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
84. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
85. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
86. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
87. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
88. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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89. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

90. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

17. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
18. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

89. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.
90. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.
91. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.
92. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.
93. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.
94. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.
95. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.
96. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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97. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.
98. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.
99. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

uuu) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

vvv) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

www) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

xxx) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

yyy) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

zzz) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

aaaa) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

bbbb) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

cccc) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

25. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
26. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
27. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

41. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
42. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
43. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
44. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
45. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT THONDAMUTHUR MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	156	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	70	Kanuvai
7	Brick Jelly	70	Kanuvai
8	Lime stone	15	Local
9	Pressed tiles 23 x 23 x 2 cm	15	Local
10	Cement & Steel	15	Local

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

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CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THONDAMUTHUR MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT THONDAMUTHUR MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

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QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Thondamuthur MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Thondamuthur MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		$1m^2$ (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		$1m^2$ (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT MAMBALLI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT MAMBALLI MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.9,000/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District".**

This TWO PART TENDER form contains the schedules as indicated in the index.

19. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

20. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.9,000/- (Rupees Nine thousand only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

uuu) Test, Inspection and rejection of defective materials and work.
vvv) Carriage
www) Accidents
xxx) Delays
yyy) Sanction on particulars of payments
zzz) Construction Plant
aaaa) Water and lighting and
bbbb) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

10. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

64. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

65. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

66. The contractor shall not enter the private land without written understanding of the owner.

67. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

68. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

69. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

70. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

37) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

38) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

39) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

40) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

137. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

138. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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139. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

140. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

141. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

142. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

143. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

144. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

145. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

146. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

147. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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148. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

150. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

kk) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

ll) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

mm) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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nn) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

64. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
65. A scaffold shall not be constructed, taken down, or subsequently altered except.
    s) Under the supervision of a competent and responsible person and;
    t) By competent workers possessing adequate experience in this kind of work.
66. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
67. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
68. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
69. A competent person shall periodically inspect scaffolds.

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70. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

10. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

bb) Be so constructed and maintained to obviate from risks of persons tripping or slipping

cc) Be kept free from any unnecessary obstructions.

dd) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

28. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
29. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
30. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

46. Safe means of access shall be provided to all working platform and other working places.
47. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
48. Every place where work is carried on the mean of approach there to shall be adequately lighted.
49. Adequate precautions shall be taken to prevent danger from electrical equipment.
50. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

10. Hoisting machines and tackle including their attachments enhotages and supports shall.
    s) be of good mechanical construction sound materials and adequate strength and free from patent defects and
    t) be kept in good repair and in good working order.

    Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

19. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
20. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

19. Every Crane driver or hoisting appliances operator shall be properly qualified.
20. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

37. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
38. 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.
39. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
40. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

28. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
29. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
30. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

19. 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.
20. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

118. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

119. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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120. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

121. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

122. The rates quoted by the tenderer should include all de-watering charges.

123. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

124. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

125. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

126. The tenderer will be paid only for finished items of works.

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127. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

128. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

129. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

130. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

bb) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

cc) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

dd) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

40.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

19. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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20. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

s. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

t. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

bb. Designing a concrete mix, before the actual concreting operation starts.

cc. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

dd. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

91. Clean river sand shall be used in all cases.
92. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.
93. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.
94. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.
95. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.
96. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.
97. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.
98. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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99. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

100. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

19. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
20. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

100. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.

101. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.

102. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.

103. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.

104. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.

105. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.

106. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.

107. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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108. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.

109. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.

110. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

dddd) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

eeee) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

ffff) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

gggg) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

hhhh) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

iiii) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

jjjj) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

kkkk) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

llll) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

28. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
29. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
30. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

46. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
47. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
48. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
49. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
50. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT MAMBALLI MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	130	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	45	Kanuvai
7	Brick Jelly	45	Kanuvai
8	Lime stone	10	Local
9	Pressed tiles 23 x 23 x 2 cm	10	Local
10	Cement & Steel	10	Local

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT MAMBALLI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT MAMBALLI MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Mamballi MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Mamballi MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	7.50 m^3	Dismantling of brick work carefully and keeping the debris away from the site of work etc., complete		1m^3 (One Cubic Metre)	
2	1.50 m^3	Dismantling of Reinforced cement concrete carefully and keeping the debris away from the site of work etc., complete		1m^3 (One Cubic Metre)	
3	4.00 m^2	Dismantling of M.S door carefully and keeping the same where the place shown by the departmental officers etc., complete		1m^2 (One Square Metre)	
4	40.00 m^2	Dismantling of pressed tiled floor carefully and keeping the debris away from the site of work etc., complete		1m^2 (One Square Metre)	
5	20.00 m^3	Earth work excavation for foundation in all soils and sub with an initial lead and lift etc., complete		1m^3 (One Cubic Metre)	
6	25.00 m^3	Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete		1m^3 (One Cubic Metre)	
7	2.00 m^3	Supplying and filling of M.sand layer not more than 15cm thick etc., complete		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	7.00 m^3	Supplying and filling gravel in layers of not more than15cm thick etc., complete		1m^3 (One Cubic Metre)	
9	6.00 m^3	Plain cement concrete 1:5:10 using 40mm size HBG stone jelly etc., complete		1m^3 (One Cubic Metre)	
10	4.65 m^3	Reinforced cement concrete 1:2:4 using 20mm size HBG stone jelly etc., complete a) Foundation and basement		1m^3 (One Cubic Metre)	
	1.25 m^3	b)Above basement and upto 4.50m ht		1m^3 (One Cubic Metre)	
11	13.00 m^2	Supplying,erecting and steel centering for all RCC works. a)Upto basement plain surfaces		1m^2 (One Square Metre)	
	12.00 m^2	c)0 to 3.30m - plain surfaces		1m^2 (One Square Metre)	
12	5.00 Qtl	Supplying, fabricating and placing in position of reinforcement grill for all RCC works.		1m^2 (One Qutinal)	

Signature of the Contractor

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	2.50 m^3	Random rubble masonry in cementmortar 1:5 using hard granite roughstone etc., complete		1m^3 (One Cubic Metre)	
14	25.00 m^3	Brick work in Cement Mortar 1:5 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" a) Foundation and basement		1m^3 (One Cubic Metre)	
	4.50 m^3	b) above basement and upto 4.5m ht		1m^3 (One Cubic Metre)	
15	1.50 m^2	Brick partition wall in C.M.1:3 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" including plastering both sides in C.M. 1:5, 12mm thick etc., complete.		1m^2 (One Square Metre)	
16	36.00 m^2	Plastering Cement Mortar 1:3 12mm thick etc., complete.		1m^2 (One Square Metre)	
17	25.00 m^2	Plastering Cement Mortar 1:3 20mm thick etc., complete.		1m^2 (One Square Metre)	
18	70.00 m^2	Plastering Cement Mortar 1:5 12mm thick etc., complete.		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
19	3.50 m^3	Plain cement concrete 1:2:4 using 20mm HBG Stone jelly		1m^3 (One Cubic Metre)	
20	22.00 m^2	Dadooing wall with colour glazed in C.M 1:2,12mm thick etc.,complete		1m^2 (One Square Metre)	
21	3.00 m^2	Supplying and fixing of cuddapah slab of 38mm/40mm with double side polish and edge polish etc., complete		1m^2 (One Square Metre)	
22	16.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 30mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	
23	11.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 50mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
24	40.00 m^2	Providing IPS flooring (indian pattern stone) in cement concrete 1:2:4 (one cement two sand and four aggregate) using 10mm to 12mm HBG Stone jelly and top plastering in C.M 1:1,10mm thick etc., complete		1m^2 (One Square Metre)	
25	300 Kg	Supplying, fabricating and placing in position of M.S angle, rafters and purlins etc., complete		1Kg (One Kilo gram)	
26	12.00 m^2	Supplying and fixing of Rolling shutter of standard section and specification etc., complete		1m^2 (One Square Metre)	
27	10.00 RM	Providing groove cutting RCC road of 5mm width and 50mm deep etc., complete		1 RM (One Running Metre)	
28	10.00 RM	Filling the expansion joint of road cutting with bitumen sand mixture etc., complete		1 RM (One Running Metre)	
29	12.00 m^2	Supplying and fixing of G.I powder coated sheet roofing 0.47mm thick including necessary bolt, nut and washer etc., complete		1m^2 (One Square Metre)	
30	6.00 RM	Supplying and fixing of PVC rain water pipe of 110mm dia of approved colour and quality of 4kg/cm2 including bend, shoe and clamps etc., complete		1 RM (One Running Metre)	
31	20.00 RM	Supplying and fixing of 1" dia PVC pipe of 10kg/cm2 of approved quality including E.W excavation and refilling etc., complete		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
32	1.00 No	Supplying and fixing of Cuddapah slab sink of size 2' x 2' etc., complete		1 No (One Number)	
33	6.00 m^2	Supplying and fixing of M.S ventilators of outer frame of 35mm x 35mm x 6mm and intermediate 2Nos in each direction with 25mm x 25mm x 5mm as stiffner etc., rate including each direction (horizontal and vertical) with 12mm square bar @ 15cm C/C and weld mesh of 1" x 1",10g etc., complete		$1m^2$ (One Square Metre)	
34	1.00 No	Supplying and fixing of PVC water tank of 1000 litres capacity and fixing in position etc., complete		1 No (One Number)	
35		Supplying and fixing of following dia PVC pipe of 6kg/cm2 etc., complete			
	15.00 RM	a) 1 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	b) 2 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	c) 4" dia PVC Pipe		1 RM (One Running Metre)	
	30.00 RM	d) 6" dia PVC Pipe		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
36		Supplying and fixing of half urn ball valve of following sizes of approved quality and make etc., complete.			
	4.00 Nos	a) 1" Ball valve		1 No (One Number)	
	2.00 Nos	b) 3/4" Ball valve		1 No (One Number)	
37	2.00 Nos	Supplying and fixing of 1/2" dia C.P tap of approved make and quality etc., complete		1 No (One Number)	
38	83.00 m^2	Painting two coats of plastic emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
39	75.00 m^2	Painting two coats of exterior emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
40	50.00 m^2	Painting two coats of enamel paint of approved colour and quality over a coat of primer etc., complete for new iron work		$1m^2$ (One Square Metre)	
41	50.00 m^2	Painting two coats of enamel paint of approved colour and quality etc., complete for old iron work		$1m^2$ (One Square Metre)	

GST

(Forty one items only)

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SALAI VEMBU WOMEN MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SALAI VEMBU WOMEN MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.9,000/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Salai vembu women MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Salai vembu women MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Salai vembu women MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Salai vembu women MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Salai vembu women MPCS, Coimbatore District".**

This TWO PART TENDER form contains the schedules as indicated in the index.

21. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

22. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.9,000/- (Rupees Nine thousand only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

cccc) Test, Inspection and rejection of defective materials and work.
dddd) Carriage
eeee) Accidents
ffff) Delays
gggg) Sanction on particulars of payments
hhhh) Construction Plant
iiii) Water and lighting and
jjjj) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

11. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ only) drawn on (Bank) _ _ _ _ _ _ _ _ _ _ _ _ _ _ Branch _ in favour of The General Manager, CDCMPU Limited,payable at Coimbatore.

4	Whether registered class of the tenderer with monetary limit and department in which registered. [Certified copy of the registration should be attached]	Yes/No
5	Whether details of infrastructure facilities.	Yes/No
6	Whether details of past experience / under execution enclosed.	Yes/No
7	If so, whether necessary supportive documents such as copies of completion certificates.	Yes/No
8	Income Tax Permanent Account Number (PAN) attached	Yes/No
9	GSTIN number attached	Yes/No
10	Whether all the pages in the tender formats, Part – A (Technical Bid) and Part - B (Commercial Bid) have been duly signed by authorized signatory	Yes/No
11	Whether two covers have been wax sealed duly superscribed as "tender for the work of **Construction of building for accommodating a 5000 Ltr. capacity BMC at Salai vembu women, Coimbatore District "** Part-A Technical bid"or"Part-B Commercial bid" (whichever is applicable)	Yes/No
12	Whether these two sealed covers for Part – A, Technical Bid and Part – B, Commercial Bid, put in a larger cover duly superscribed addressed and wax sealed at appropriate places.	Yes/No

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SCHEDULE

SPECIAL CONDITIONS

71. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

72. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

73. The contractor shall not enter the private land without written understanding of the owner.
74. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

75. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

76. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

77. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

41) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

42) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

43) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

44) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

151. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

152. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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153. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

154. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

155. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

156. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

157. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

158. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

159. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

160. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

161. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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162. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

164. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

oo) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

pp) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

qq) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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rr) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

71. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
72. A scaffold shall not be constructed, taken down, or subsequently altered except.
    u) Under the supervision of a competent and responsible person and;
    v) By competent workers possessing adequate experience in this kind of work.
73. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
74. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
75. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
76. A competent person shall periodically inspect scaffolds.

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77. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

11. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

ee) Be so constructed and maintained to obviate from risks of persons tripping or slipping

ff) Be kept free from any unnecessary obstructions.

gg) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

31. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
32. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
33. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

51. Safe means of access shall be provided to all working platform and other working places.
52. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
53. Every place where work is carried on the mean of approach there to shall be adequately lighted.
54. Adequate precautions shall be taken to prevent danger from electrical equipment.
55. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

11. Hoisting machines and tackle including their attachments enhotages and supports shall.
    u) be of good mechanical construction sound materials and adequate strength and free from patent defects and
    v) be kept in good repair and in good working order.

    Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

21. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
22. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

21. Every Crane driver or hoisting appliances operator shall be properly qualified.
22. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

41. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
42. 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.
43. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
44. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

31. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
32. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
33. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

21. 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.
22. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

131. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

132. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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133. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

134. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

135. The rates quoted by the tenderer should include all de-watering charges.

136. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

137. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

138. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

139. The tenderer will be paid only for finished items of works.

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140. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

141. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

142. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

143. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

ee) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

ff) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

gg) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

44.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

21. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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22. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

u. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.
v. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

ee. Designing a concrete mix, before the actual concreting operation starts.

ff. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

gg. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

101. Clean river sand shall be used in all cases.

102. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.

103. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.

104. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.

105. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.

106. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.

107. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.

108. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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109. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

110. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

21. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
22. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

111. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.

112. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.

113. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.

114. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.

115. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.

116. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.

117. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.

118. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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119. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.

120. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.

121. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

mmmm) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

nnnn) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

oooo) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

pppp) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

qqqq) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

rrrr) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

ssss) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

tttt) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

uuuu) The rate for all item in which use of cement is involved is inclusive of charges for curing.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

31. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
32. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
33. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

In case the Union provides the power supply, it shall be on the following conditions:

51. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
52. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
53. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
54. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
55. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT SALAI VEMBU WOMEN MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	160	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	5	Local
7	Brick Jelly	5	Local
8	Lime stone	10	Local
9	Pressed tiles 23 x 23 x 2 cm	20	Mettupalayam
10	Cement & Steel	10	Local

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SALAIVEMBU WOMEN MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT SALAIVEMBU WOMEN MPCS, COIMBATORE DISTRICT

Signature of the Contractor

INDEX OF CONTENTS

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1.	ISSUE LETTER FOR TENDER DOCUMENT
2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Salai vembu women MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Salai vembu women MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	7.50 m^3	Dismantling of brick work carefully and keeping the debris away from the site of work etc., complete		1m^3 (One Cubic Metre)	
2	1.50 m^3	Dismantling of Reinforced cement concrete carefully and keeping the debris away from the site of work etc., complete		1m^3 (One Cubic Metre)	
3	4.00 m^2	Dismantling of M.S door carefully and keeping the same where the place shown by the departmental officers etc., complete		1m^2 (One Square Metre)	
4	40.00 m^2	Dismantling of pressed tiled floor carefully and keeping the debris away from the site of work etc., complete		1m^2 (One Square Metre)	
5	20.00 m^3	Earth work excavation for foundation in all soils and sub with an initial lead and lift etc., complete		1m^3 (One Cubic Metre)	
6	25.00 m^3	Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete		1m^3 (One Cubic Metre)	
7	2.00 m^3	Supplying and filling of M.sand layer not more than 15cm thick etc., complete		1m^3 (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	7.00 m^3	Supplying and filling gravel in layers of not more than15cm thick etc., complete		1m^3 (One Cubic Metre)	
9	6.00 m^3	Plain cement concrete 1:5:10 using 40mm size HBG stone jelly etc., complete		1m^3 (One Cubic Metre)	
10	4.65 m^3	Reinforced cement concrete 1:2:4 using 20mm size HBG stone jelly etc., complete a) Foundation and basement		1m^3 (One Cubic Metre)	
	1.25 m^3	b)Above basement and upto 4.50m ht		1m^3 (One Cubic Metre)	
11	13.00 m^2	Supplying,erecting and steel centering for all RCC works. a)Upto basement plain surfaces		1m^2 (One Square Metre)	
	12.00 m^2	c)0 to 3.30m - plain surfaces		1m^2 (One Square Metre)	
12	5.00 Qtl	Supplying, fabricating and placing in position of reinforcement grill for all RCC works.		1m^2 (One Qutinal)	

Signature of the Contractor

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	2.50 m^3	Random rubble masonry in cementmortar 1:5 using hard granite roughstone etc., complete		1m^3 (One Cubic Metre)	
14	25.00 m^3	Brick work in Cement Mortar 1:5 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" a) Foundation and basement		1m^3 (One Cubic Metre)	
	4.50 m^3	b) above basement and upto 4.5m ht		1m^3 (One Cubic Metre)	
15	1.50 m^2	Brick partition wall in C.M.1:3 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" including plastering both sides in C.M. 1:5, 12mm thick etc., complete.		1m^2 (One Square Metre)	
16	36.00 m^2	Plastering Cement Mortar 1:3 12mm thick etc., complete.		1m^2 (One Square Metre)	
17	25.00 m^2	Plastering Cement Mortar 1:3 20mm thick etc., complete.		1m^2 (One Square Metre)	
18	70.00 m^2	Plastering Cement Mortar 1:5 12mm thick etc., complete.		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
19	3.50 m^3	Plain cement concrete 1:2:4 using 20mm HBG Stone jelly		1m^3 (One Cubic Metre)	
20	22.00 m^2	Dadooing wall with colour glazed in C.M 1:2,12mm thick etc.,complete		1m^2 (One Square Metre)	
21	3.00 m^2	Supplying and fixing of cuddapah slab of 38mm/40mm with double side polish and edge polish etc., complete		1m^2 (One Square Metre)	
22	16.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 30mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	
23	11.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 50mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
24	40.00 m^2	Providing IPS flooring (indian pattern stone) in cement concrete 1:2:4 (one cement two sand and four aggregate) using 10mm to 12mm HBG Stone jelly and top plastering in C.M 1:1,10mm thick etc., complete		1m^2 (One Square Metre)	
25	300 Kg	Supplying, fabricating and placing in position of M.S angle, rafters and purlins etc., complete		1Kg (One Kilo gram)	
26	12.00 m^2	Supplying and fixing of Rolling shutter of standard section and specification etc., complete		1m^2 (One Square Metre)	
27	10.00 RM	Providing groove cutting RCC road of 5mm width and 50mm deep etc., complete		1 RM (One Running Metre)	
28	10.00 RM	Filling the expansion joint of road cutting with bitumen sand mixture etc., complete		1 RM (One Running Metre)	
29	12.00 m^2	Supplying and fixing of G.I powder coated sheet roofing 0.47mm thick including necessary bolt, nut and washer etc., complete		1m^2 (One Square Metre)	
30	6.00 RM	Supplying and fixing of PVC rain water pipe of 110mm dia of approved colour and quality of 4kg/cm2 including bend, shoe and clamps etc., complete		1 RM (One Running Metre)	
31	20.00 RM	Supplying and fixing of 1" dia PVC pipe of 10kg/cm2 of approved quality including E.W excavation and refilling etc., complete		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
32	1.00 No	Supplying and fixing of Cuddapah slab sink of size 2' x 2' etc., complete		1 No (One Number)	
33	6.00 m^2	Supplying and fixing of M.S ventilators of outer frame of 35mm x 35mm x 6mm and intermediate 2Nos in each direction with 25mm x 25mm x 5mm as stiffner etc., rate including each direction (horizontal and vertical) with 12mm square bar @ 15cm C/C and weld mesh of 1" x 1",10g etc., complete		$1m^2$ (One Square Metre)	
34	1.00 No	Supplying and fixing of PVC water tank of 1000 litres capacity and fixing in position etc., complete		1 No (One Number)	
35		Supplying and fixing of following dia PVC pipe of 6kg/cm2 etc., complete			
	15.00 RM	a) 1 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	b) 2 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	c) 4" dia PVC Pipe		1 RM (One Running Metre)	
	30.00 RM	d) 6" dia PVC Pipe		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
36		Supplying and fixing of half urn ball valve of following sizes of approved quality and make etc., complete.			
	4.00 Nos	a) 1" Ball valve		1 No (One Number)	
	2.00 Nos	b) 3/4" Ball valve		1 No (One Number)	
37	2.00 Nos	Supplying and fixing of 1/2" dia C.P tap of approved make and quality etc., complete		1 No (One Number)	
38	83.00 m^2	Painting two coats of plastic emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
39	75.00 m^2	Painting two coats of exterior emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
40	50.00 m^2	Painting two coats of enamel paint of approved colour and quality over a coat of primer etc., complete for new iron work		$1m^2$ (One Square Metre)	
41	50.00 m^2	Painting two coats of enamel paint of approved colour and quality etc., complete for old iron work		$1m^2$ (One Square Metre)	

GST

(Forty one items only)

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KRISHNARAYAPURAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KRISHNARAYAPURAM MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.9,000/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

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1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Krishnarayapuram MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Krishnarayapuram MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Krishnarayapuram MPCS, Coimbatore District "** -Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Krishnarayapuram MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Krishnarayapuram MPCS, Coimbatore District".**

This TWO PART TENDER form contains the schedules as indicated in the index.

23. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

24. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.9,000/- (Rupees Nine thousand only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

kkkk) Test, Inspection and rejection of defective materials and work.
llll) Carriage
mmmm) Accidents
nnnn) Delays
oooo) Sanction on particulars of payments
pppp) Construction Plant
qqqq) Water and lighting and
rrrr) Cleaning up during progress and for delivery.

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4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

12. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

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11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

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4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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4.17 Goods and Service Tax :

Applicable as per the directions of Government.

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5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

78. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

79. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

80. The contractor shall not enter the private land without written understanding of the owner.
81. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

82. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

83. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

84. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

45) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

46) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

47) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

48) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

165. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

166. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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167. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

168. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

169. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

170. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

171. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

172. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

173. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

174. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

175. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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176. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

178. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25. The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.
26. When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.
27. Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

ss) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

tt) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

uu) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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vv) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

78. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
79. A scaffold shall not be constructed, taken down, or subsequently altered except.
    w) Under the supervision of a competent and responsible person and;
    x) By competent workers possessing adequate experience in this kind of work.
80. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
81. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
82. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
83. A competent person shall periodically inspect scaffolds.

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84. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

12. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

hh) Be so constructed and maintained to obviate from risks of persons tripping or slipping

ii) Be kept free from any unnecessary obstructions.

jj) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

34. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
35. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
36. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

56. Safe means of access shall be provided to all working platform and other working places.
57. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
58. Every place where work is carried on the mean of approach there to shall be adequately lighted.
59. Adequate precautions shall be taken to prevent danger from electrical equipment.
60. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

12. Hoisting machines and tackle including their attachments enhotages and supports shall.

w) be of good mechanical construction sound materials and adequate strength and free from patent defects and

x) be kept in good repair and in good working order.

Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

23. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
24. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

23. Every Crane driver or hoisting appliances operator shall be properly qualified.
24. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

45. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
46. 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.
47. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
48. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

34. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
35. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
36. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

23. 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.

24. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

144. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

145. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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146. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

147. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

148. The rates quoted by the tenderer should include all de-watering charges.

149. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

150. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

151. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

152. The tenderer will be paid only for finished items of works.

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153. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

154. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

155. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

156. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

hh) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

ii) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

jj) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

48.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

23. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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24. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

w. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

x. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

hh. Designing a concrete mix, before the actual concreting operation starts.

ii. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

jj. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

111. Clean river sand shall be used in all cases.

112. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.

113. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.

114. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.

115. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.

116. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.

117. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.

118. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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119. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

120. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

23. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
24. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

122. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.

123. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.

124. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.

125. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.

126. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.

127. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.

128. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.

129. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

130. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.

131. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.

132. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

vvvv) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

wwww) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

xxxx) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

yyyy) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

zzzz) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

aaaaa) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

bbbbb) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

ccccc) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

ddddd) The rate for all item in which use of cement is involved is inclusive of charges for curing.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

34. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
35. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
36. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

In case the Union provides the power supply, it shall be on the following conditions:

56. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
57. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
58. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
59. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
60. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT KRISHNARAYAPURAM MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	130	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	45	Kanuvai
7	Brick Jelly	45	Kanuvai
8	Lime stone	10	Local
9	Pressed tiles 23 x 23 x 2 cm	10	Local
10	Cement & Steel	10	Local

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KRISHNARAYAPURAM MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KRISHNARAYAPURAM MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Krishnarayapuram MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Krishnarayapuram MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	7.50 m^3	Dismantling of brick work carefully and keeping the debris away from the site of work etc., complete		$1m^3$ (One Cubic Metre)	
2	1.50 m^3	Dismantling of Reinforced cement concrete carefully and keeping the debris away from the site of work etc., complete		$1m^3$ (One Cubic Metre)	
3	4.00 m^2	Dismantling of M.S door carefully and keeping the same where the place shown by the departmental officers etc., complete		$1m^2$ (One Square Metre)	
4	40.00 m^2	Dismantling of pressed tiled floor carefully and keeping the debris away from the site of work etc., complete		$1m^2$ (One Square Metre)	
5	20.00 m^3	Earth work excavation for foundation in all soils and sub with an initial lead and lift etc., complete		$1m^3$ (One Cubic Metre)	
6	25.00 m^3	Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete		$1m^3$ (One Cubic Metre)	
7	2.00 m^3	Supplying and filling of M.sand layer not more than 15cm thick etc., complete		$1m^3$ (One Cubic Metre)	

Signature of the Contractor

No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	7.00 m^3	Supplying and filling gravel in layers of not more than15cm thick etc., complete		1m^3 (One Cubic Metre)	
9	6.00 m^3	Plain cement concrete 1:5:10 using 40mm size HBG stone jelly etc., complete		1m^3 (One Cubic Metre)	
10	4.65 m^3	Reinforced cement concrete 1:2:4 using 20mm size HBG stone jelly etc., complete a) Foundation and basement		1m^3 (One Cubic Metre)	
	1.25 m^3	b)Above basement and upto 4.50m ht		1m^3 (One Cubic Metre)	
11	13.00 m^2	Supplying,erecting and steel centering for all RCC works. a)Upto basement plain surfaces		1m^2 (One Square Metre)	
	12.00 m^2	c)0 to 3.30m - plain surfaces		1m^2 (One Square Metre)	
12	5.00 Qtl	Supplying, fabricating and placing in position of reinforcement grill for all RCC works.		1m^2 (One Qutinal)	

Signature of the Contractor

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	2.50 m^3	Random rubble masonry in cementmortar 1:5 using hard granite roughstone etc., complete		1m^3 (One Cubic Metre)	
14	25.00 m^3	Brick work in Cement Mortar 1:5 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" a) Foundation and basement		1m^3 (One Cubic Metre)	
	4.50 m^3	b) above basement and upto 4.5m ht		1m^3 (One Cubic Metre)	
15	1.50 m^2	Brick partition wall in C.M.1:3 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" including plastering both sides in C.M. 1:5, 12mm thick etc., complete.		1m^2 (One Square Metre)	
16	36.00 m^2	Plastering Cement Mortar 1:3 12mm thick etc., complete.		1m^2 (One Square Metre)	
17	25.00 m^2	Plastering Cement Mortar 1:3 20mm thick etc., complete.		1m^2 (One Square Metre)	
18	70.00 m^2	Plastering Cement Mortar 1:5 12mm thick etc., complete.		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
19	3.50 m^3	Plain cement concrete 1:2:4 using 20mm HBG Stone jelly		1m^3 (One Cubic Metre)	
20	22.00 m^2	Dadooing wall with colour glazed in C.M 1:2,12mm thick etc.,complete		1m^2 (One Square Metre)	
21	3.00 m^2	Supplying and fixing of cuddapah slab of 38mm/40mm with double side polish and edge polish etc., complete		1m^2 (One Square Metre)	
22	16.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 30mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	
23	11.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 50mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
24	40.00 m^2	Providing IPS flooring (indian pattern stone) in cement concrete 1:2:4 (one cement two sand and four aggregate) using 10mm to 12mm HBG Stone jelly and top plastering in C.M 1:1,10mm thick etc., complete		1m^2 (One Square Metre)	
25	300 Kg	Supplying, fabricating and placing in position of M.S angle, rafters and purlins etc., complete		1Kg (One Kilo gram)	
26	12.00 m^2	Supplying and fixing of Rolling shutter of standard section and specification etc., complete		1m^2 (One Square Metre)	
27	10.00 RM	Providing groove cutting RCC road of 5mm width and 50mm deep etc., complete		1 RM (One Running Metre)	
28	10.00 RM	Filling the expansion joint of road cutting with bitumen sand mixture etc., complete		1 RM (One Running Metre)	
29	12.00 m^2	Supplying and fixing of G.I powder coated sheet roofing 0.47mm thick including necessary bolt, nut and washer etc., complete		1m^2 (One Square Metre)	
30	6.00 RM	Supplying and fixing of PVC rain water pipe of 110mm dia of approved colour and quality of 4kg/cm2 including bend, shoe and clamps etc., complete		1 RM (One Running Metre)	
31	20.00 RM	Supplying and fixing of 1" dia PVC pipe of 10kg/cm2 of approved quality including E.W excavation and refilling etc., complete		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
32	1.00 No	Supplying and fixing of Cuddapah slab sink of size 2' x 2' etc., complete		1 No (One Number)	
33	6.00 m^2	Supplying and fixing of M.S ventilators of outer frame of 35mm x 35mm x 6mm and intermediate 2Nos in each direction with 25mm x 25mm x 5mm as stiffner etc., rate including each direction (horizontal and vertical) with 12mm square bar @ 15cm C/C and weld mesh of 1" x 1",10g etc., complete		$1m^2$ (One Square Metre)	
34	1.00 No	Supplying and fixing of PVC water tank of 1000 litres capacity and fixing in position etc., complete		1 No (One Number)	
35		Supplying and fixing of following dia PVC pipe of 6kg/cm2 etc., complete			
	15.00 RM	a) 1 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	b) 2 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	c) 4" dia PVC Pipe		1 RM (One Running Metre)	
	30.00 RM	d) 6" dia PVC Pipe		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
36		Supplying and fixing of half urn ball valve of following sizes of approved quality and make etc., complete.			
	4.00 Nos	a) 1" Ball valve		1 No (One Number)	
	2.00 Nos	b) 3/4" Ball valve		1 No (One Number)	
37	2.00 Nos	Supplying and fixing of 1/2" dia C.P tap of approved make and quality etc., complete		1 No (One Number)	
38	83.00 m^2	Painting two coats of plastic emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
39	75.00 m^2	Painting two coats of exterior emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
40	50.00 m^2	Painting two coats of enamel paint of approved colour and quality over a coat of primer etc., complete for new iron work		$1m^2$ (One Square Metre)	
41	50.00 m^2	Painting two coats of enamel paint of approved colour and quality etc., complete for old iron work		$1m^2$ (One Square Metre)	

GST

(Forty one items only)

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BOGAMPATTI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BOGAMPATTI MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.9,000/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART – A

TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

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1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District".**

This TWO PART TENDER form contains the schedules as indicated in the index.

25. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

26. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(PO),
Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.9,000/- (Rupees Nine thousand only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

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4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

ssss) Test, Inspection and rejection of defective materials and work.
tttt)Carriage
uuuu) Accidents
vvvv) Delays
wwww) Sanction on particulars of payments
xxxx) Construction Plant
yyyy) Water and lighting and
zzzz) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

13. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

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11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

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where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

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Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

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4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

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Signature of the Contractor

4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

85. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

86. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

87. The contractor shall not enter the private land without written understanding of the owner.

88. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

89. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

90. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

91. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

SIGNATURE OF THE CONTRACTOR

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8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

49) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

50) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

51) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

52) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

179. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

180. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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181. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

182. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

183. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

184. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

185. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

186. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

187. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

188. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

189. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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190. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

192. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

ww) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

xx) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

yy) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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zz) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

85. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
86. A scaffold shall not be constructed, taken down, or subsequently altered except.
    y) Under the supervision of a competent and responsible person and;
    z) By competent workers possessing adequate experience in this kind of work.
87. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
88. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
89. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
90. A competent person shall periodically inspect scaffolds.

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91. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

13. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

kk) Be so constructed and maintained to obviate from risks of persons tripping or slipping

ll) Be kept free from any unnecessary obstructions.

mm) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

37. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
38. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
39. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

61. Safe means of access shall be provided to all working platform and other working places.
62. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
63. Every place where work is carried on the mean of approach there to shall be adequately lighted.
64. Adequate precautions shall be taken to prevent danger from electrical equipment.
65. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

13. Hoisting machines and tackle including their attachments enhotages and supports shall.
    y) be of good mechanical construction sound materials and adequate strength and free from patent defects and
    z) be kept in good repair and in good working order.

    Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

25. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
26. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

25. Every Crane driver or hoisting appliances operator shall be properly qualified.
26. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

49. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
50. 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.
51. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
52. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

37. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
38. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
39. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

25. 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.
26. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

157. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

158. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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159. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

160. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

161. The rates quoted by the tenderer should include all de-watering charges.

162. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

163. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

164. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

165. The tenderer will be paid only for finished items of works.

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166. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

167. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

168. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

169. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

kk) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

ll) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

mm) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

52.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

25. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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26. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

y. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

z. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

kk. Designing a concrete mix, before the actual concreting operation starts.

ll. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

mm. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

121. Clean river sand shall be used in all cases.

122. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.

123. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.

124. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.

125. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.

126. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.

127. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.

128. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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129. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

130. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

25. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
26. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

133. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.

134. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.

135. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.

136. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.

137. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.

138. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.

139. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.

140. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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141. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.

142. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.

143. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

eeeee) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

fffff) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

ggggg) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

hhhhh) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

iiiii) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

jjjjj) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

kkkkk) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

lllll) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

mmmmm) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

37. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
38. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
39. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

61. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
62. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
63. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
64. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
65. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT BOGAMPATTI MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	120	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	9	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	40	Kanuvai
7	Brick Jelly	40	Kanuvai
8	Lime stone	10	Local
9	Pressed tiles 23 x 23 x 2 cm	20	Coimbatore
10	Cement & Steel	9	Local

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BOGAMPATTI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT BOGAMPATTI MPCS, COIMBATORE DISTRICT

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3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Bogampatti MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Bogampatti MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	11.50 m^3	Dismantling of brick work carefully and keeping the debris away from the site of work etc., complete		$1m^3$ (One Cubic Metre)	
2	3.00 m^3	Dismantling of Reinforced cement concrete carefully and keeping the debris away from the site of work etc., complete		$1m^3$ (One Cubic Metre)	
3	12.00 m^2	Dismantling of M.S door carefully and keeping the same where the place shown by the departmental officers etc., complete		$1m^2$ (One Square Metre)	
4	75.00 m^2	Dismantling of pressed tiled floor carefully and keeping the debris away from the site of work etc., complete		$1m^2$ (One Square Metre)	
5	20.00 m^3	Earth work excavation for foundation in all soils and sub with an initial lead and lift etc., complete		$1m^3$ (One Cubic Metre)	
6	25.00 m^3	Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete		$1m^3$ (One Cubic Metre)	
7	2.00 m^3	Supplying and filling of M.sand layer not more than 15cm thick etc., complete		$1m^3$ (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	2.50 m^3	Supplying and filling gravel in layers of not more than15cm thick etc., complete		1m^3 (One Cubic Metre)	
9	5.00 m^3	Plain cement concrete 1:5:10 using 40mm size HBG stone jelly etc., complete		1m^3 (One Cubic Metre)	
10	4.65 m^3	Reinforced cement concrete 1:2:4 using 20mm size HBG stone jelly etc., complete a) Foundation and basement		1m^3 (One Cubic Metre)	
	1.20 m^3	b)Above basement and upto 4.50m ht		1m^3 (One Cubic Metre)	
11	13.00 m^2	Supplying,erecting and steel centering for all RCC works. a)Upto basement plain surfaces		1m^2 (One Square Metre)	
	12.00 m^2	c)0 to 3.30m - plain surfaces		1m^2 (One Square Metre)	
12	5.00 Qtl	Supplying, fabricating and placing in position of reinforcement grill for all RCC works.		1m^2 (One Qutina l)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	1.00 m^3	Random rubble masonry in cementmortar 1:5 using hard granite roughstone etc., complete		1m^3 (One Cubic Metre)	
14	24.00 m^3	Brick work in Cement Mortar 1:5 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" a) Foundation and basement		1m^3 (One Cubic Metre)	
	1.00 m^3	b) above basement and upto 4.5m ht		1m^3 (One Cubic Metre)	
15	1.50 m^2	Brick partition wall in C.M.1:3 using II class chamber burnt bricks of size 9" x 4 1/2" x 3" including plastering both sides in C.M. 1:5, 12mm thick etc., complete.		1m^2 (One Square Metre)	
16	25.00 m^2	Plastering Cement Mortar 1:3 12mm thick etc., complete.		1m^2 (One Square Metre)	
17	25.00 m^2	Plastering Cement Mortar 1:3 20mm thick etc., complete.		1m^2 (One Square Metre)	
18	28.00 m^2	Plastering Cement Mortar 1:5 12mm thick etc., complete.		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
19	3.00 m^3	Plain cement concrete 1:2:4 using 20mm HBG Stone jelly		1m^3 (One Cubic Metre)	
20	29.00 m^2	Dadooing wall with colour glazed in C.M 1:2,12mm thick etc.,complete		1m^2 (One Square Metre)	
21	3.00 m^2	Supplying and fixing of cuddapah slab of 38mm/40mm with double side polish and edge polish etc., complete		1m^2 (One Square Metre)	
22	19.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 30mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	
23	6.00 m^2	Supplying and laying of Modikkuppam paradise granite stone slab of 50mm tk in C.M 1:3-30mm thick etc., complete		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
24	73.00 m^2	Providing IPS flooring (indian pattern stone) in cement concrete 1:2:4 (one cement two sand and four aggregate) using 10mm to 12mm HBG Stone jelly and top plastering in C.M 1:1,10mm thick etc., complete		1m^2 (One Square Metre)	
25	320 Kg	Supplying, fabricating and placing in position of M.S angle, rafters and purlins etc., complete		1Kg (One Kilo gram)	
26	12.00 m^2	Supplying and fixing of Rolling shutter of standard section and specification etc., complete		1m^2 (One Square Metre)	
27	10.00 RM	Providing groove cutting RCC road of 5mm width and 50mm deep etc., complete		1 RM (One Running Metre)	
28	10.00 RM	Filling the expansion joint of road cutting with bitumen sand mixture etc., complete		1 RM (One Running Metre)	
29	6.00 m^2	Supplying and fixing of G.I powder coated sheet roofing 0.47mm thick including necessary bolt, nut and washer etc., complete		1m^2 (One Square Metre)	
30	10.00 RM	Supplying and fixing of PVC rain water pipe of 110mm dia of approved colour and quality of 4kg/cm2 including bend, shoe and clamps etc., complete		1 RM (One Running Metre)	
31	20.00 RM	Supplying and fixing of 1" dia PVC pipe of 10kg/cm2 of approved quality including E.W excavation and refilling etc., complete		1 RM (One Running Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
32	1.00 No	Supplying and fixing of Cuddapah slab sink of size 2' x 2' etc., complete		1 No (One Number)	
33	8.00 m^2	Supplying and fixing of M.S ventilators of outer frame of 35mm x 35mm x 6mm and intermediate 2Nos in each direction with 25mm x 25mm x 5mm as stiffner etc., rate including each direction (horizontal and vertical) with 12mm square bar @ 15cm C/C and weld mesh of 1" x 1",10g etc., complete		$1m^2$ (One Square Metre)	
34	1.00 No	Supplying and fixing of PVC water tank of 1000 litres capacity and fixing in position etc., complete		1 No (One Number)	
35		Supplying and fixing of following dia PVC pipe of 6kg/cm2 etc., complete			
	15.00 RM	a) 1 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	b) 2 1/2" dia PVC Pipe		1 RM (One Running Metre)	
	10.00 RM	c) 4" dia PVC Pipe		1 RM (One Running Metre)	
	30.00 RM	d) 6" dia PVC Pipe		1 RM (One Running Metre)	

Signature of the Contractor

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
36		Supplying and fixing of half urn ball valve of following sizes of approved quality and make etc., complete.			
	4.00 Nos	a) 1" Ball valve		1 No (One Number)	
	2.00 Nos	b) 3/4" Ball valve		1 No (One Number)	
37	2.00 Nos	Supplying and fixing of 1/2" dia C.P tap of approved make and quality etc., complete		1 No (One Number)	
38	210.00 m^2	Painting two coats of plastic emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
39	125.00 m^2	Painting two coats of exterior emulsion paint of approved colour and quality over a coat of primer etc., complete.		$1m^2$ (One Square Metre)	
40	50.00 m^2	Painting two coats of enamel paint of approved colour and quality over a coat of primer etc., complete for new iron work		$1m^2$ (One Square Metre)	
41	50.00 m^2	Painting two coats of enamel paint of approved colour and quality etc., complete for old iron work		$1m^2$ (One Square Metre)	

GST

(Forty one items only)

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – A

TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KONDAMPATTI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALAYAM(PO),COIMBATORE-10

TWO PART TENDER
PART – A
TECHNICAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KONDAMPATTI MPCS, COIMBATORE DISTRICT

EARNEST MONEY DEPOSIT	: Rs.11,800/-
COST OF TENDER DOCUMENT	: Rs.1,000/- + Tax
SALE OF TENDER DOCUMENT	: 02-06-2022 to 20-06-2022
LAST DATE & TIME OF RECEIPT OF TENDER (Both Technical & Commercial Bids)	: 21-06-2022 upto 3.00 p.m.
DATE & TIME OF OPENING OF TECHNICAL BID	: 21-06-2022 at 3.30 p.m.
DATE & TIME OF OPENING OF COMMERCIAL BID	: 7days from the date of opening of Technical bid.
PERIOD OF COMPLETION	: 3 1/2 Months
PLACE OF OPENING	: THE CDCMPU LTD, NEW DAIRY COMPLEX, PACHAPALAYAM, KALAMPALAYAM(PO), COIMBATORE-641 010.

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT
PART – A
TECHNICAL BID

This Two Part Tender document set containing Part-A Technical Bid and Drawings.

Issued to: ----------

The fee for this set of Tender document is Rs.1000 /- + Tax.
Sale of Tender Document Vide Receipt No…….
Dated……..

For and on behalf of
THE CDCMPU LTD,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Issued by:

General Manager
AAVIN, COIMBATORE-641 010.

Signature of the Contractor

ELIGIBILITY CRITERIA

Contractor should furnish along with technical bid tender

- Registered contractors in appropriate class in PWD, Highways and other Government Departments & Undertakings are eligible to participate in the tender.
- The tenderer should furnish contract registration certificate clearly indicating Registration class & monetary limits.
- The tenderer should furnish contract registration live certificate.
- The tenderer should furnish Income Tax Permanent Account Number.
- The tenderer should furnish GSTIN Registration Certificate.
- The tenderer should furnish past experience certificate (work completion certificate) for the past three financial years clearly indicating department of work executed, period and value of work).
- The tenderer should furnish average annual sales turnover for the last 3 (three) financial years which shall not be less than the tender value of contract in the same name & style and minimum annual sales turnover in last three years shall not be less than 50% of the tender value of contract.
- The tenderer should have completed atleast one building work and the value should not be less than 60% of the tender value for any one of the last 3 (three) years.

Signature of the Contractor

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1.TWO PART TENDER APPLICATION

From

To
The General Manager,
CDCMPU Ltd,
New Dairy Complex,
Pachapalayam,
Kalampalayam(po),
Coimbatore-10.

Sir,

Sub : Construction of building for accommodating 5000 Ltr.
capacity BMC at Kondampatti MPCS, Coimbatore District.

Having examined the TWO PART TENDER documents consisting of Part-A Technical bid and Part -B Commercial bid with price quote, I/We hereby submit all the necessary documents and relevant information for bidding the above mentioned tender.

The application is made by me / us on behalf of……in the capacity of……duly authorized to submit this TWO PART TENDER offer.

Necessary evidence admissible in law in respect of authority assigned to me on behalf of the bidding firm is herewith attached.

I/We submit the documents herewith taking into consideration of all the instructions, terms and conditions in the detailed two part tender notice.

I/We understand that the General Manager, CDCMPU Ltd, Coimbatore-10 reserves the right to reject any tender offer without assigning any reasons thereof.

I/We hereby agree to hold the tender offer valid for acceptance for a period of 90 days from the date of opening of the Part-B Commercial Bid.

Signature of the Applicant
including title capacity

Name (IN BLOCK LETTERS)

Encl: 1. Evidence of authority to sign.
2. Latest brochures if any.
3. Part-A pre-qualification / Technical bid in separate sealed cover.
4. Part-B Commercial bid with price quote in separate sealed cover.

Signature of the Contractor

2. INSTRUCTIONS TO THE TENDERERS

This TWO PART TENDER document consists of:
Part-A – Pre-qualifying Technical bid
Part-B - Commercial bid with price quote schedules.

2.1 Read all the terms and conditions of the TWO PART TENDER before you start filling up.

2.2 Tenderers are to submit the original set of the TWO PART TENDER (both Part-A Technical Bid and Part-B Commercial Bid) duly filled in, attach necessary documents.

2.3 Part – A Pre-qualification / Technical bid and Part-B Commercial Bid should be submitted in two different covers duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kondampatti MPCS, Coimbatore District ".** Pre-qualification / Technical Bid " in one over and another cover as "Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kondampatti MPCS, Coimbatore District " -**Commercial bid " and again put in a larger wax sealed cover duly superscribed as " Tender for the work of **Construction of building for accommodating 5000 Ltr. capacity BMC at Kondampatti MPCS, Coimbatore District "** addressed to "The General Manager, The C.D.C.M.P.Union Limited, Pachapalayam, Kalampalayam (PO), Coimbatore-10 " and submit either in person or by post so as to reach on or before the time and date specified. Tenders which are not completed as stated above (two cover system) and received after the specified date and time shall be summarily rejected.

2.4 Go through the check slip given and ensure compliance of the terms and conditions.

2.5 Tenderer is specifically informed that all the pages in both Part-A – Technical bid and Part-B–Commercial Bid should be signed at the bottom of each page without any omission by the authorized signatory with name and seal of the firm.

SIGNATURE OF THE TENDERER.

Signature of the Contractor

3. INTRODUCTION

TWO PART TENDER form for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Kondampatti MPCS, Coimbatore District ".**

This TWO PART TENDER form contains the schedules as indicated in the index.

27. Last date and time for submission of the Two Part Tender - both Part-A Technical and Part-B Commercial bids : 21-06-2022 upto 3.00 p.m.

28. Date and time of opening of Part-A Technical bid : 21-06-2022 at 3.30 p.m.

3. Place of opening of Part-A Technical bid : O/o.General Manager, CDCMPU Ltd, New Dairy Complex, Pachapalayam, Kalampalayam(PO), Coimbatore-641 010.

4. Date and time of opening of Part-B Commercail bids (price quoted) : 7 days from the date of opening of technical bid.

SIGNATURE OF THE TENDERER

Signature of the Contractor

4.GENERAL TERMS AND CONDITIONS

4.1. PART-A Technical bid, wherein the pre-qualification, based on various factors such or suitability and eligibility of the tenderer will be evaluated, considered and decided prior to opening and consideration of Commercial Bids under PART-B of the tender.

4.2 PART-A Technical bid shall be opened on 21-06-2022 at 3.30 p.m. in the presence of the tenderers or their authorized representative who opt to be present during the opening.

4.3 PART-B Commercial Bid of the tenderers who do not satisfy any / all the terms and conditions specifically so mentioned under PART-A Technical bid, shall not be considered eligible and shall not be opened.

4.4 PART-B Commercial Bid, wherein the rates tendered by those who quality themselves for and are selected as per the terms and conditions prescribed in PART-A Technical Bid only will be considered and decided for the award of the contract.

4.5 Part-B Commercial bids shall be opened after scrutiny of Part-A Pre-qualification / Technical bids in respect of those who are found and declared as qualified, eligible and shall listed as per technical parameters and terms and conditions of pre-qualification bid with prior individual intimation in the presence of tenderers or their authorized representative who opt to be present. The date of such opening of Part-B Commercial bid will be informed separately to those who qualify in the PART-A Technical bid confirm to the Technical parameters prescribed thereon.

4.6 The tender forms are not transferable or assignable.

4.7 The signatory of the tender should indicate his / their status in which he / they have signed and submit necessary documentary proof admissible in law in respect of such authority assigned to him / them by the firm. If the tender opening day is declared as a holiday. The tenders shall be received and opened immediately on the next working day of the same time and place.

4.8 EARNEST MONEY DEPOSIT:

4.8.1 All tenders must be accompanied with the prescribed amount of EMD along with tender.

4.8.2 EMD Amount of Rs.11,800/- (Rupees Eleven Thousand Eight Hundred only) to be drawn by means of Bank Demand Draft from any nationalized or scheduled Bank drawn in favour of "The General Manager, CDCMPU Limited" payable at Coimbatore. **IT SHALL BE ENCLOSED WITH THE PART-A TECHNICAL BID ONLY.** No other form of remittance shall be accepted.

4.8.3 Tenders not accompanied with Demand Draft towards the prescribed EMD shall be summarily rejected.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.8.4 Should the tenderer withdraw his offer before finalization of the tender, the EMD remitted by the tenderer shall be forfeited in full.

4.8.5 The tenderer should be submitted along with a covering letter giving full details as called for in the tender notice together with the copy of letter registering them in the appropriate class

.

4.8.6 The tenderer should furnish their Income Tax Permanent Account Number (PAN) in the tender document itself.

4.8.7 List of various machineries and other equipment of the tenderer disposal for use in the execution of work should be furnished.

4.8.8 Details of previous work done / under execution by the tenderer covering the cost of work. Agreement No. & Date, the department in which the work was carriedout etc., should be furnished so as to assess the previous experience of the tenderer, yearwise details should be furnished so as to see that these tenderers have minimum experience of major buildings.

4.8.9 The rate quoted in the tender shall be kept valid for 90 days from the date of opening of Part-B Commercial bids and the tenderer at his own cost shall attend and sign the contract as soon as the acceptance of tender is communicated. Failure to attend in the manner above said shall entail forfeiture of EMD furnished by the tenderer.Besides, the tenderer shall be held responsible for any loss to the Union on account of his failure to attend the manner aforesaid.

4.8.10 The EMD of the successful tenderer shall be retained as security deposit, which will not bear any interest, and the same will be released after 6 months from the date of completion of work. The EMD of the unsuccessful tenderer shall be returned after execution of the agreement of the contract.

4.8.11 The tenderer's particular attention is drawn to the sections and clauses in the general conditions of the contract dealing with

aaaaa) Test, Inspection and rejection of defective materials and work.
bbbbb) Carriage
ccccc) Accidents
ddddd) Delays
eeeee) Sanction on particulars of payments
fffff) Construction Plant
ggggg) Water and lighting and
hhhhh) Cleaning up during progress and for delivery.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.9 SECURITY DEPOSIT

4.9.1 After evaluation and finalization of Part-A pre-qualification / technical bids and Part-B commercial bids, selected tenderers would be required to sign an agreement and furnish a Security Deposit such that the total value of Security Deposit including EMD already paid shall be 2 % of the order value as specified by the tender accepting authority, drawn by means of Bank Demand Draft only from any Nationalized Bank drawn in favour of " General Manager, CDCMPU Limited" payable at Coimbatore. The EMD already paid along with tender shall be adjusted in the Security Deposit to be paid by the successful tenderer. The above Security Deposit amount will be released after 6 months from the date of completion of the work in all respects.

4.9.2 No exemption will be given for payment of security deposit under any circumstances as per TNTT Act and the same should be remitted by Demand Draft.

4.9.3 No interest shall be paid on Earnest Money Deposit / Security Deposit.

4.10 PRICE ADJUSTMENT:

4.10.1 PRICE ADJUSTMENT CLAUSE

G.O.MS.NO.60 PW (G2) Dept Dt:14.03.2008 and amended in G.O.MS.NO.101 PW (G2) Dept Dt : 10.06.2009.
Price Adjustment Clause is eligible for this work subject to the following conditions:

14. Price Adjustment Clause will be applicable for all works where value of work put to tender costing Rs.100.00 lakhs and above. However **No Price Adjustment will be applicable for maintenance and repair works.**
2. The Full Price Adjustment on all the components including **cement, steel, bitumen and Petroleum, Oil and Lubricants (POL)** shall be applicable to the work with contract period of more than 12 months with all other conditions remaining the same as per rule 14(8) of 2000 Tamil Nadu Transparency in Tender rules.
3. Full Price adjustment **on cement, steel, bitumen and POL** is applicable, if the contract period is **12 months and below.**
4. Contract Price shall be adjusted for **increase or decrease** in rates for cement, steel, bitumen and Petroleum, Oil and Lubricants (POL), Labour, Plant & Machinery spares components and local materials in accordance with the following principles and procedures and as per formula given in General Conditions of Contract.
5. Price adjustment will be calculated only on the estimated cost of work.
6. Price Adjustment will apply only when the fluctuations of rates exceed by 3% compared to the estimate rates (Reserve Bank of India – Index Price).
7. Price adjustment will be made for both **increase and decrease** in the cost of materials.
8. Bitumen and POL will be considered on 'Pass through" basis with payment of actual rates / price at the rates charged by Indian Oil Corporation.
9. Escalation will be given for only those quantities which would have been used had the contractor stuck to this original time line.
10. Price adjustment mechanism will cease to operate for the value of work executed beyond the agreement period.

Signature of the Contractor

11) Agreement period shall include the "actual period" for which the work was "suspended officially" and extension of time permitted for any valid reasons, such as
war, natural calamities, like flood, earthquake and other risks arising out of acts of God during the agreement period; work delayed due to the land acquisition process; change in design, change in scope of work, etc., which is given in writing by the Tender Calling Officer of the respective work.

All works for which price Escalation / Variation is contemplated must have milestones fixed in physical terms and have a pre-fixed time-line for use of inputs clearly indicating the nature and quantum of eligible inputs to be used for the work for the relevant period between two milestones. Price Escalation / Variation will be applicable for those quantities 'actually' used by the contractor including additional quantities if any, used or achieved ahead of the time line. However, if the contractor does a certain quantity of the work in third quarter which ought to / should have been done in the earlier quarter, Price Escalation / Variation will still be applicable on that quantity at the rates as applicable in the relevant quarter as per time-line or period of actual use whichever is less.

Price variation will be calculated as per specified formula from the last date of submission of tender upto the end of agreement period provided, if the agreement is signed within the minimum specified time, failing which, the Price variation will be applicable from the date of agreement only, based on the wholesale Price Indexes of Reserve Bank of India.The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on tender submission is fixed. In case of delayed agreement, the quarter in
which the agreement is signed will be reckoned for the purpose of calculation of price adjustments.

The Formula for adjustment of prices are:
R = Value of Work during the quarter under consideration.

i.Adjustment of Cement Component:

Price adjustment for increase or decrease in the cost of cement procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

where
V_C = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Cement.

C_0 = The RBI index for cement for the quarter during the date of opening of tenders

C_1 = The RBI index for cement for the quarter under consideration

P_C = Percentage for the cement component of the work

ii. **Adjustment of Steel Component:**
Price adjustment for increase or decrease in the cost of steel procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_S = 0.85 \times P_S / 100 \times R \times (S_1 - S_0) / S_0$$

Signature of the Contractor

where
V_S = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rate of Steel.

S_0 = The RBI index for Steel for the quarter during the date of opening of tenders

S_1 = The RBI index for Steel for the quarter under consideration

P_S = Percentage for the Steel component of the work

iii. Adjustment of Petroleum, Oil and Lubricants (POL) Component:

Price adjustment for increase or decrease in the cost of Petroleum, Oil and Lubricants (POL) procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_F = 0.85 \times P_F / 100 \times R \times (F_1 - F_0) / F_0}$$

where
V_F = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Petroleum, Oil and Lubricants.

F_0 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC on the day thirty days prior to the date of opening of tenders.

F_1 = The average official retail price of High Speed Diesel (HSD) at the existing Consumer Pumps of IOC for the 15th day of the middle calendar month for the quarter under consideration.

P_F = Percentage for the POL component of the work.

iv. Adjustment of Labour Component:
Price adjustment for increase or decrease in the cost of Labour engaged by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$\mathbf{V_L = 0.85 \times P_L / 100 \times R \times (L_1 - L_0) / L_0}$$

where

V_L = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of local Labour.

L_0 = The average consumer price index for industrial workers for Chennai centre for quarter preceding the date of opening of bids as published by Labour Bureau.

L_1 = The average consumer price index for industrial workers for Chennai centre for the quarter under consideration as published by Labour Bureau.

P_L = Percentage for the Labour component of the work

v. Adjustment of Plant and Machinery Spares Component:

Signature of the Contractor

Price adjustment for increase or decrease in the cost of Plant & Machinery spares procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_P = 0.85 \times P_P / 100 \times R \times (P_1 - P_0) / P_0$$

where

V_P = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Plant & Machinery spares.

P_0 = The average consumer price index Heavy Machinery and parts for quarter preceding the date of opening of bids as published by the Ministry of Industrial Development, Government of India.

P_1 = The average consumer price index Heavy Machinery and parts for quarter under consideration as published by Ministry of Industrial Development, Government of India.

P_P = Percentage for the Plant & Machinery spares component of the work

vi. Adjustment of Local Materials Component:

Price adjustment for increase or decrease in the cost of Local Material procured by the Contractor shall be paid in accordance with the following formula, if this component is involved in the work executed during the quarter under consideration.

$$V_M = 0.85 \times P_M / 100 \times R \times (M_1 - M_0) / M_0$$

where

V_M = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates of Local Material.

M_0 = The average consumer price index for all commodities for quarter preceding the date of opening of bids as published by RBI, Government of India.

M_1 = The average consumer price index for all commodities for quarter under consideration as published by RBI, Government of India.

P_M = Percentage for the Local Material component of the work.

The following percentages will govern the price adjustment for the entire contract:

a. Cement	..	PC - 9.49 %
b. Steel	..	PS - 22.82 %
c. POL	..	PF - 2.59 %
d. Labour	..	PL - 32.49 %
e. Plant & Machineries Spares		PP - 3.12 %
f. Local Material		PM - 29.49 %

Signature of the Contractor

4.11. BONUS FOR ADVANCE COMPLETION OF WORK

Bonus as an incentive for advance completion of work is considered. If the work is completed in advance by not less than 10 % of agreement period can be considered and bonus for 1 % on the value of actual quantum of works executed at tendered rates may be paid.

4.12 AGREEMENT:

4.12.1 The successful tenderer has to execute an agreement on Rs.40/- stamp paper incorporating the terms & conditions of the contract within 15 days from the date of work order.

4.12.2 If the contractor fails to execute the work satisfactorily at the tendered rate, the Union will forfeit the security deposit.

4.12.3 If for any reason the Union incurs any loss / additional expenditure in connection with the work during the period of contract, the same shall be recovered together with all charges and expenses from the contractor.

4.12.4 Notwithstanding anything contained in the tender schedule, no obligation is cast on the Union, to accept the lowest tender and the Union shall also have the right to accept or reject any or all the tenders without assigning any reasons.

4.12.5 For violation of any of the terms and conditions of the contract, the Union reserves the right to terminate the contract, with or without notice as applicable.

4.12.6 On termination of contract, the security deposit is liable to be forfeited and any of the resultant loss beyond that recoverable from pending bills if any.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.13 PENALTY:

If the contractor fails in its due performance of the contract within the time fixed or extension of time granted, the contractor is liable to pay liquidated damage of 1 % per month subject to the maximum of 5% on actual expenditure of contract/final bill value.

4.14 DISPUTES & ARBITRATION:

4.14.1 The Arbitrator for fulfilling the duties set forth in the Arbitration clause of General Conditions of Contract shall be in case of value of claim upto Rs.50,000/- [Rupees fifty thousand only] the Arbitrator who will be appointed by the General Manager, CDCMPU Limited, Coimbatore and if the value of claim exceeds Rs.50,000/- it shall be settled through the competent civil court of Chennai jurisdiction.

4.14.2 In case of discrepancy between the prices quoted in words and in figures, the lower of the two shall be considered.

4.15 WITHHELD AMOUNT:

5 % of bill value shall be retained in each bill as withheld amount and at the time of payment of the final bill 2½ % of the withheld amount shall be released to the contractor as first installment and the remaining 2½ % withheld amount will be retained as security deposit for a period of 1 year reckoned from the date of successful completion of work in order to enable the Federation Officers to watch the effect of all seasons on the works. Further, an Indemnity bond guarantee should also be given by the contractor for a further period of 4 years when the 2½ % balance withheld amount is released to the contractor after completion of 1 year observation period. If any defects are noticed in the above said period of 1 year, the defects should be rectified by the contractor at his own cost as directed by the Federation Officers and no extra payment will be made for the rectification of such work. If the contractor fails to carry out the rectification works, the Federation shall carryout the work at the risk and cost of the contractor & recovery from the pending dues.

4.16 SALES TAX:

The contractor's rates are inclusive of Sales Tax payable by the contractor to Government as per the Tamil Nadu General Sales Tax Act of 1939 as amended from time to time. No enhanced rates will be paid to the contractor for any upward revision of Sales Tax during the currency of the contract.

The tenderer shall furnish the Sales Tax Registration Number and the Area of Sales Tax Officer having jurisdiction over the place of business may be indicated. Further a deduction of 2 % GST will be deducted from the contractor's bill.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

4.17 Goods and Service Tax :

Applicable as per the directions of Government.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

5. CHECK SLIP

Kindly ensure compliance of the under-mentioned requirements, as per Tender Terms and Conditions.

1	Whether the EMD amount remitted.	Yes/No
2	If yes, whether DD attached with the Tender offer – Part A / Technical bid.	Yes/No
3	If yes, details of DD No., date, Bank on which drawn etc., may be furnished.	Yes/No

Demand Draft No. _ _ _ _ _ _ _ _ dated _ _ _ _ _ _ _ _ for a value of `. _ _ _ _ _ _ _ _ (Rupees _ _ _ _ _ _ _ _

SCHEDULE

SPECIAL CONDITIONS

92. The work shall be carried out strictly in accordance with the specification and provision stipulated in the (TNDSS) Tamil Nadu Detailed Standard Specifications and (NBC) National Building Code unless otherwise specified.

93. The contractor shall abide to the conditions set-forth in the preliminary specification to T.N.D.S.S. 1952 reprint. Wherever the words "Executive Engineer and Superintending Engineer" occurring shall be read as General Manager respective of the CDCMPU Limited.

94. The contractor shall not enter the private land without written understanding of the owner.

95. The work shall be carried out in the best workmanship manner. Pure water and best materials available in the market shall be used on the work.

96. The work site shall be kept clean always and all unused materials shall be removed from the site within one month from the date of physical completion of work.

97. The work should be completed as specified herein:

PERIOD OF COMPLETION OF WORK 3 1/2 MONTHS

1st month from the date of handing over the site – 35 %
2nd month from the date of handing over the site – 55 %
3rd month from the date of handing over the site – 85 %
3 1/2 month from the date of handing over the site – 100 %

98. If night work is involved, the contractor shall make his own arrangements at his cost. The work shall be carried out with least hindrance to the adjacent buildings and the contractor will be held responsible for the damages caused to the existing structure, fittings etc.

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

8. a).The arrangement of MS & RTS Rods for reinforcement for R.C.C. works shall be in accordance with the working drawing.

b).The planks for forms and centering for R.C.C works shall be of well seasoned timber approved by the officer-in-charge of work according to the para 10 clause 30 of T.N.D.S.S.

c).Holes and recesses for electric wiring, water supply and drainage etc. shall be provided as directed during progress of work without any claim for extra.

d).The broken stones for Reinforced Cement Concrete and Plain Cement Concrete works shall be of granite blasted and broken to the requiring size as specified.

e).All the cement concrete will be machine mixed and vibrators shall be used while placing the concrete for RCC works.

9. a]. **The required quantity of steel and cement will be own arrangement by the tenderer**.

b]. The quality of cement and steel used to the work by the tenderer to be tested as per ISI specification in the PWD quality control lab / Government Engineering college lab / Government recognized lab at his own cost and the test result shall be produced to the site Engineer-in-charge and the same shall be confirmed by the site in-charge.

c]. The balance quantity of steel and cement will be taken by the tenderer after completion of the work.

10.The tenderers who are themselves not professionally qualified shall undertake to employ qualified staff at their cost to look after the work. The tenderers should state that in clear terms, whether they are professionally qualified or whether they undertake to employ technical staff required by the department, specified in the schedule below for the work. In case the selected tenderer is professionally qualified or has undertake to employ technical staff under him, he should see that one of the technically qualified staff is always at the site of the work during working hours, personally checking all items of works and paying extra attention to such works as may deemed special attention (e.g.) Reinforced Cement Concrete works etc. If the tenderer fails to employ Technical Assistant the recovery will be as follows:

(In the format below enter or incorporate the latest norms fixed by Federation for the employment of Technical Assistant from time to time and penalty for non employment of such Technical Assistant etc.)

SIGNATURE OF THE CONTRACTOR

Signature of the Contractor

S No	Value of contract	Qualification and No. of Technical Assistance to be employed
1	Upto Rs.1.00 lakhs	No Technical Assistant need be employed, if situation and nature of work warrants. i. A Diploma holder in Civil Engineering (or) ii. A retired Junior Engineer may be employed.
2	From Rs.1.00 lakhs to Rs.5.00 lakhs	i. One Diploma holder in Civil Engineering (or) ii. Not less than one retired Junior Engineer
3	From Rs.5.00 lakhs to Rs.10.00 lakhs	i. One B.E. (Civil) (or) ii. Equivalent Degree holder (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer (or) iv. One Diploma Holder with 3 years experience.
4	From Rs.10.00 lakhs to Rs.25.00 lakhs	i. One B.E. (Civil) with 3 years experience plus one diploma holder in Civil Engineering (or) ii. Equivalent Degree holder with 3 years experience plus one diploma holder in Civil Engineering (or) iii. Not less than one retired Assistant Executive Engineer / Assistant Divisional Engineer plus one diploma holder in Civil Engineering (or) iv. Two Diploma Holders in Civil Engineering with 3 and 5 years experience respectively.
5	From Rs.25.00 lakhs to Rs.50.00 lakhs	i. One B.E. (Civil) with 3 years experience plus two diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus two retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus two diploma holder in Civil Engineering / two retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two retired Junior Engineers.
6	Above Rs.50.00 Lakhs to Rs.1.00 Crore	To be examined in individual cases depending upon the nature of work and the technical skill involved and defines in the tender notice regarding the number of qualified technical personnel to be employed by the contractor.

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S No	Value of contract	Qualification and No. of Technical Assistance to be employed
7	Above Rs.1.00 Crore to Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus two diploma holders in Civil Engineering (or) v. One retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.
8	Above Rs.3.00 Crores.	i. One B.E. (Civil) with 3 years experience plus three diploma holders in Civil Engineering (or) ii. One B.E (Civil) with 3 years experience plus three retired Junior Engineers (or) iii. Equivalent Degree holder with 3 years experience plus three diploma holder in Civil Engineering / three retired Junior Engineers (or) iv. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three diploma holders in Civil Engineering (or) v. Two retired Assistant Executive Engineer / Assistant Divisional Engineer plus three retired Junior Engineers.

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Note:

53) Item (1), (2), (3), (4) (5) and (6) should be scored No. 1 out in case where not applicable to the particular work.

54) A penalty of Rs.2,000/- per month for Diploma holder and Rs.5,000/- per month for degree holder will be levied in case of default on the part of contractors in following the norms laid down above.

55) The employment of Technical Assistants could be based only on value of contract. Engineers with Mechanical Engineer qualification and retired from Civil Engineer departments are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineer field.

56) In case of contract who is professionally qualified is not in position to remain always at the site of the work and pay extra attention to such work, as many demand special attention (e.g. RCC work etc.) he should employ technically qualified man as prescribed above.

193. a) The quantities provided in the schedule are approximate subject to variation up to 25% either way of requirement indicated in the tender schedule. The payment for the work done shall be restricted to the recorded measurement of finished item in sites.

b) The rate for additional items not contemplated in the agreements shall be decided at the discretion of General Manager as per the principle in vogue in PWD circles and rules applicable to the PWD special buildings circles.

194. a). The tenderer shall inspect the site and satisfy himself about the site condition and soil condition, availability of water etc. and other materials as shown in the lead statement. The rate quoted by the tenderer is final and for finished item of work in site and any claims for enhancement of rate shall not be entertained.

b). Sheds for storing construction materials like cement and steel shall be provided at tenderer's cost, which shall be removed within one month from the date of completion.

c). All tools & plants, and other building materials required for the work shall be arranged by the tenderer himself.

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195. The tenderer's special attention is invited to clause 37 and 38 of the Preliminary Specifications of TNDSS and he is requested to provide at his own expense sheds, latrines, and urinals for his workmen.

196. If night work is required to fulfill the agreed rate of progress, all arrangements shall be made by the tenderers inclusive of lighting without any claim for extra.

197. The tenderer shall not employ the labour below the age of 12 years and shall also note that he must offer employment to ex-servicemen, ex-toditappers, and unemployed agricultural labourers as far as possible.

198. Any of the items in the schedule may be omitted or radically altered. No variation in rate shall become payable to tenderer an account of such omission or variation in quantities.

199. Reference to TNDSS in the schedule of quantities referred to reprint 1952 and addenda corrigenda issued thereafter.

200. The construction of the building will be deemed to be completed only if all the items of works including finishing items contemplated herein are executed.

201. The tenderer shall abide by the tenderer's labour regulation of the PW frames by the Tamilnadu Government.

202. The tenderer shall be responsible for the safe custody and storage of the materials under dry conditions at the places of the work spot approved by the Engineer.

203. No royalty shall be charged where due for materials quarried from the corporation or other Government quarries. Necessary assistance will be given to the tenderer by the corporation to obtain access to quarries approved by the Federation Engineer. No plot rent shall be charged so far materials stacked on the Government land during the course of construction provided all such materials are removed within the month after the work is completed.

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204. The tenderer shall pay royalty or charges due for use of private quarries and private land.

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

206. Any surplus materials remaining at the site, will not generally taken over by the Federation, whether before or after the completion or termination of contract. Such materials either which were originally procured by the tenderer or were issued to them by the Department and charged to their accounts, are the property of the tenderers and can however be taken over by Department if required, for use on other works which are in progress only by special arrangements and at the prevailing market rates. Viz. the rates at which the articles of a similar description can be procured at a given time at the stores, go-down from public market suitable to the Federation office for obtaining the supply thereof.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of storage charge if any.

If the Union originally used the materials, the price allowed to the tenderer on re-acquisition shall not exceed the amount charged to the tenderer excluding the elements of shortage charge if any.

The surplus materials, which were originally issued to the tenderer by the Department for use on the work, shall not be removed from the site of work without getting the written permission of the Federation Engineer.

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25.The tenderer shall at his own expense provide arrangements 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-in-charge and on his failure to do so, Federation shall be entitled to provide same and recover the cost from the tenderer.

26.When there are complaints of no-payment of wages to the labour, bills of the tenderer may be withheld pending a clearance certificate from the Labour Department.

27.Rules for the provision of health and sanitary arrangements for workers employed by the Federation and its tenderers.

The tenderer's special attention is invited to clause 37, 38, 39, and 51 of the preliminary specification to the TamilNadu Detailed Standard Specification and he is requested to provide at his own expenses, the following amenities to the satisfaction of the Federation Engineer.

1.FIRST AID:

At the work site, there shall be maintained in a readily accessible place, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton roll. The appliances shall be kept in a good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

2.DRINKING WATER:

aaa) Water of good quality fit for drinking purpose shall be provided for the work people on a scale of not less than three gallons per head per day.

bbb) Where drinking water is obtained from an intermittent public water supply each work place shall be provide with storage tank where such drinking water shall be stored.

ccc) Every water supply and storage shall be at a distance of not less than 15 m from any latrine, drain or other existing well which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly closed if water is drawn from it for drinking. All such wells shall be entirely closed and be provided with a trap door, which shall be dust and waterproof.

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ddd) A reliable pump shall be fitted to each covered well. The trap door shall be kept locked and opened only for cleaning or inspection, which shall be done 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 places shall be kept in clear and drained condition. Bathing or washing should not be allowed in or near the drinking water well.

4. LATRINES AND URINALS:

There 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 the following scale or on the scale so directly by Executive Engineer in any particulars case.

i.	Where the number of persons employed does not exceed 50	2 Seats
ii.	Where the number of persons employed exceed 50 but does not exceed 100	3 Seats
iii.	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 places provided with water flushed latrines connected with a water borne sewage system all latrines shall be provided with acceptable dry earth system which will be cleared at least four times daily and at least twice during working hours and kept in strictly sanitary condition. The latrines and urinals shall be tarred inside and outside at least once a year.

The excrete from the latrines shall be disposed off at the tenderer's expenses, in outside pits approved by the local Public Health Authority. The tenderer shall also employ adequate number of scavengers, conservancy staff to keep the latrines and urinals in clean condition.

5. SHELTERS DURING REST:

At the work site, there shall be provided at free of cost, two suitable sheds one for meals and another for rest for the use of labour.

6. CRÈCHE:

At every work place at which 25 or more women working ordinary employed there shall be provided two huts of suitable size for the use of children under the age of 6 years belonging to such women. One hut shall be used for infants, games and play and the other as their bedroom. The huts shall not be constructed on lower standard than the following.

- ✓ Thatched Roofs.
- ✓ Mud floors and walls.
- ✓ Planks spread over the mud floor and covered with matting.

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The size of the crèche or crèches should vary according to the number of women workers. The crèches should properly maintain and necessary equipment like toys etc. should be provided and huts shall be provided with suitable and sufficient sweepers to keep the place clean. There shall be two ayahs in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The number of the huts shall be restricted to children, their attendants, and others of the children.

7. CANTEEN:

A cooked good canteen on moderate scale shall be provided for the benefits of the workers if it is considered expedient.

8. SHEDS FOR WORKMEN:

The tenderer should provide at their own expense sheds for housing the workmen. The sheds shall be on a standard not less than the cheep shelter type to live in which the works pertaining to locality are accustomed to. A floor area of about 1.80 m -1.50 m for two persons shall be provided. The sheds are to be in row with 1.50 m clear spaces between the sheds and 24 m clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each. Each unit should have clear space of 14.4 m.

9. Safety provision in the building industry conditions in addition to clause 36 of preliminary specification of TNDSS.

PART - I

ARTICLE – 1

92. Suitable scaffolds shall be provided for workmen for all work cannot be safely done from a ladder or by other means.
93. A scaffold shall not be constructed, taken down, or subsequently altered except.
    aa) Under the supervision of a competent and responsible person and;
    bb) By competent workers possessing adequate experience in this kind of work.
94. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.
95. Scaffolds shall not be overloaded and so far as practicable and shall be evenly distributed.
96. Before installing lifting gear on scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
97. A competent person shall periodically inspect scaffolds.

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98. Before allowing a scaffold to be used by his workmen every employee shall, satisfy as to whether the scaffold has been executed by his workmen or not he should take steps to ensure that it functions fully with the requirement of this articles.

ARTICLE – 2

14. Working Platforms, gangway and staircase shall be so constructed that no part thereof can sag unduly or unequally.

nn) Be so constructed and maintained to obviate from risks of persons tripping or slipping

oo) Be kept free from any unnecessary obstructions.

pp) Every working platform, gangway, working place, and staircase shall be suitably forced.

ARTICLE – 3

40. Every opening in the floor of a building or in a working platform shall except for the time and to the extent required to allow the excess of persons or the transport or shifting of materials be provided with suitable means to prevent the fall of persons or materials.
41. When persons are employed on a roof where there is danger of falling from height exceeding that to be prescribed by national laws or regulations, suitable precautions shall be taken to prevent the fall of persons or material.
42. Suitable precautions shall be taken to prevent persons being struck by articles, which might fall from scaffolds or other working places.

ARTICLE – 4

66. Safe means of access shall be provided to all working platform and other working places.
67. Every ladder shall be securely fixed and of such length as to provide secure handhold and foothold at every position at which it is used.
68. Every place where work is carried on the mean of approach there to shall be adequately lighted.
69. Adequate precautions shall be taken to prevent danger from electrical equipment.
70. No material on the site shall be so attached or placed as to cause danger to any persons.

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PART – II

GENERAL RULES AS TO HOISTING APPLIANCES:

ARTICLE - 5

14. Hoisting machines and tackle including their attachments enhotages and supports shall.

aa) be of good mechanical construction sound materials and adequate strength and free from patent defects and

bb) be kept in good repair and in good working order.

Every rope used in hoisting or lowering materials or as a means of suspension shall be suitable quality and adequate strength and free from patent defects.

ARTICLE – 6

27. Hoisting machines and tackle shall be examined and adequately tested after erection on the site and before use and be re-examined in positional intervals to be prescribed by national law or regulations.
28. Every chain ring, hook shackle, swivels, and pulley block used in hoisting or lowering materials or as a means of suspension shall be periodically examined.

ARTICLE – 7

27. Every Crane driver or hoisting appliances operator shall be properly qualified.
28. No persons under an age to be prescribed by national laws, regulations shall be in control of any hoisting machinery including any scaffold which, or give signals to the operator.

ARTICLE – 8

53. In the case of every hoisting machine and every chain ring, hook shackle, swivel and pulley block used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means.
54. 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.
55. Every hoisting machine and all gear referred to in the proceeding paragraphs shall be plainly marked with the safe working load.
56. No part of any hoisting machine or of any gear referred to in paragraph 1 of this article shall be loaded beyond the safe working load except for the purpose of testing.

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ARTICLE – 9

40. Motors gearing, transmission, electric wiring and other dangerous parts of hoisting appliances, shall be provided with sufficient safe guards.
41. Hoisting appliances shall be provided with such means as will reduce the risk of the accidental descent of the load.
42. Adequate precautions shall be taken to reduce the risk of any part of a suspended load becoming accidentally displaced.

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PART – III

GENERAL RULES TO SAFETY EQUIPMENT AND FIRST AID

ARTICLE - 10

27. 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.
28. The workers shall be required to use the equipment thus provided and the employer shall take adequate steps to ensure proper use of the equipment by those concerned.

ARTICLE - 11

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

ARTICLE - 12

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

ARTICLE - 13

Where large work places are situated in cities, towns or in their suburban 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 the hospitals, at their work places, some conveyance facilities such as car shall be kept readily available to the injured person or persons suddenly taken seriously ill to the nearest hospital.

GENERAL QUALITY OF TILES

170. Unless otherwise required the wearing face of the terrace tiles shall be mechanically sound and flat. The wearing face of the tiles shall be plane, free from projections, depressions and cracks, (Hair-cracks not included) and shall be reasonably parallel to the back face of tiles. All corners shall be right angles and all edges shall be sharp and true.

171. Breaking transverse strength of tiles shall be given as below:

Size of tile	Span	Breaking wet test	Land based dry test
19.85 x 19.85 cm	15 cm	71 kg	106 kg
24.85 x 24.85 cm	20 cm	90 kg	120 kg
29.85 x 29.85 cm	25 cm	99 kg	149 kg

The average wear of not less than 12 specimens shall not exceed 2 mm and the wear on any individual specimen shall not exceed 2.5 cm when tested in an absorption machine.

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172. The average percentage of water absorption shall not be less than six full tiles shall not exceed ten in the case of water absorption test.

173. The density of the tiles shall be in the order of about 2.4 gms. The tiles shall be laid with the minimum possible width of joints and not exceeding 1/32 inch. The joints shall be filled with gray 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, walls, coves and other areas where the machines can have no access and to a high degree so as to present a perfectly smooth and glossy surface as even as possible.

All angles at junctions of vertical faces shall be rounded off to 1½" radius with same quality of materials and colour of the tiles of the floor. But lay in site and these coves shall be measured as part of flooring and laid for at the same rates and the flat floors. The colours of the tiles shall generally match other coloured face adjacent as may be directed by the Union Officers.

The dadoing and skirting have to be finished by giving necessary recess in the brick wall itself so that the projections does not exceed ¾" from the face of the wall i.e. the finish plastered surface.

Based on the modulus or rapture of 30 kg./m² for dry test and 2/3 of the value of wet test.

174. The rates quoted by the tenderer should include all de-watering charges.

175. The works shall be proceeded with expeditiously from the date of the site is handed over and completed within the prescribed schedule.

176. In the event of the work being transferred to any other Department like PWD to execute all the powers and privileges reserve in favour of the Union.

177. The materials used for work should be of best quality and to be got approved by the Federation Engineers / Officers and approved samples are to be kept at site of work till the completion of the work.

178. The tenderer will be paid only for finished items of works.

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179. All fittings of furniture for doors and windows shall be best quality steel machine made and wall japanned. The iron hold fasts shall be built up in the wall in cement mortar 1:3 at the time of construction of walls. No extra claim shall be made for the same.

180. In the case if 'T' beams and 'L' Beams, the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC work the rate shall include the treatment of bearing as per plate W.No.2 of 1946 as per MDSS (Page 52 of 1952 Edition).

181. The tenderer should cooperate with the tenderer for erection of machinery and provide him with necessary holes in the masonry and subsequently refill, without extra cost. There should be cooperation with the tenderers for the civil works and machinery.

182. In the case of earthwork excavation in hard rock requiring blasting the tenderer should observe the following condition.

i). The blasting rock shall be compactly stacked for measurement. The net quantity of blasted rock shall be arrived by allowing a deduction of 40% of voids and compared with pre-measured quantity and only the lesser of the two shall be paid.

ii). When the rock other than hard rock and hard rock mixed upon ground the two kinds of rocks shall be stacked separately for measurement. The net measurement of the two kinds of rock shall be arrived by allowing 40% deductions for voids. The total of the net measurements of two kinds of rocks shall be compared with the pre-measured quantity and only lesser of the two kinds of rock shall be paid for. If the total of net measurements if the two kinds of rocks exceeds or falls short of measurement of mixture the volume of mixture proposed to be paid shall be apportioned in the proportion of the actual measurements of stacks of the two kinds of rock.

NOTE:

nn) 40% deduction for voids shall be adopted for compact and proper stacking but such deduction shall be increased for loose or improper stacks.

oo) The blasted rock materials stacked, measured, and paid for shall become property of the Department.

pp) IS Code No. 1200 (Part I) 1969 method of measurement of building and Civil Engineering works Pare-I earthwork may be referred to.

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EXTRACT OF: NATIONAL BUILDING CODE OF INDIA 1970

PART – VI, SECTION 5-A: PLAIN AND REINFORCED CONCRETE

4.2. GRADE OF CONCRETE.

4.2.1. Plain and Reinforced Cement Concrete shall be in seven grades as designed M100, M150, M200, M250, M300, M350, and M400.

NOTE: In the designation of a concrete mix, letter "M" refers to the mix and the number of the specified 28 days of works cube compressive strength of that mix expressed in Kg./cm².

4.2.2.1. Where ordinary port-land cement or port-land blast furnace slag cement conforming to accepted standard VI.5 (2) IS 269/1967 specification for ordinary rapid hardening and low heat port-land cement.

IS 455/1967 specifications for port-land and blast furnace slag cement is used. The compressive strength requirements for various grades of concrete shall be as given in Table-1. Where rapid hardening port-land cement is used, the 28 days compressive strength requirements specified in Table-1 shall be met at 7 days where other cement are used, the Engineer-in-charge shall specify the corresponding requirements preferably on the basis of preliminary test.

56.2.2.2. The strength requirements specified in Table-1 shall apply to both controlled concrete and ordinary concrete (see 4.3.1) preliminary tests need not however be made in the case of ordinary concrete.

27. In order to get a relatively quicker idea of the quality of concrete optional works tests on beams for modulus of rupture at 72 + 2 hours or at 7 days or compressive strength tests at 7 days may be carried out in addition to 28 days compressive strength test. In all cases, the 28 days compressive strength specified in Table-1 shall alone be 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 a suitable ratio between the 28 days compressive strength and the modulus of rupture at 72 + 2 hours or at 7 days or compressive strength at 7 days may be accepted. The Engineer-in-charge may suitably relax the frequency of 28 days compressive strength test specified in Table 5 provided the expected strength values given 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.

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28. Whether the strength of a concrete mix as indicated by test lies between the strength for any two grades, specified in Table-1, such concrete shall be classified for all purposes 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 the proportion of cement aggregate and water to attain the required strength shall be made by one of the following:

aa. With preliminary tests by designing the concrete mix. Such concrete shall be called controlled concrete.

bb. Without preliminary tests by adopting nominal concrete mixes. Such concrete shall be called ordinary concrete.

4.3.2. CONTROLLED CONCRETE:

4.3.2.1. As far as practicable, controlled concrete should be used on all concrete works. Controlled concrete for use in plain and reinforced concrete structures shall be in grade M 100, M 150, M 200, M 250, M 300, M 350, and M 400.

4.3.2.2. The concrete mix shall be designed to have a average strength corresponding to the values specified for preliminary test in Table-1. The proportions chosen should be such that the concrete is of adequate workability for the conditions prevailing on the work in question and may be properly compacted with the means available.

The maximum total quantity of aggregate by weight per 50 Kg. of cement shall not exceed 450 Kg. except where otherwise specifically permitted by the Engineer-in-Charge.

4.3.2.3. Except where it can be shown to the satisfaction of the Engineer-in-charge that supply of properly graded aggregate of uniform quality may be maintained over the period of work, the grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportion when required the different sizes being stocked in separate stock piles. The materials should be stock piled for 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 that on the samples used in the preliminary tests.

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4.3.2.4. In proportioning concrete the quantity of both cement and aggregate should be determined by weight. Where the weight of cement is determined by accepting the manufacturer's weight per bag, a reasonable number of bags should be weighed separately to check the net weight. Where the cement is weighed on the site and not in bags it should be weighed separately from the aggregates. Water should be either measured by volumes in calibrated tanks or weighed. All measuring conditions and their accuracy may be periodically checked.

4.3.2.5. It is most important to maintain the water cement ratio constant at its correct value. To this end, determination of moisture contents in both fine and coarse aggregates 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 of the added water should be adjusted to compensate for any observed variations in the moisture contents. Their determination of moisture content in the aggregate shall be carried out in accordance with good practice (VI-5-9) IS 2386 Part III-1963. To allow for the variation in weight of aggregates due to variation in their moisture content suitable adjustment in the weight of aggregate should also be made.

4.3.2.6. On substitution in materials used on the work or alteration 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. To slump test or where facilities, exist the compacting factor test conducted in accordance with good practice [VI-5 (10)] may adopted for this purpose.

4.3.2.8. A competent person should be employed whose first duty will be to supervise all stages in the preparation and placing of the concrete. All works test specimens 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 and ordinary concrete may be used for concrete of grades M 100, M 150, M 200, M 250. The proportions of materials for nominal concrete mixes for ordinary concrete shall be in accordance with Table-3.

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4.3.3.2. In proportioning concrete, the quantity of cement should be determined by weight. The quantity of fine and course aggregates 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-3 and the weight per litre of dry aggregate. If fine aggregate is moist and volume batching is adopted, allowances to be made for bulking in accordance with good practice [VI-5 (9)].

4.3.3.3. The water cement ratio shall not be more than those specified in Table-3.

The cement content of the mix specified in Table-3 for any nominal mix may be increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water cement ratio specified in Table-3 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 that what is sufficient to produce a dense concrete of adequate, workability for the 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 sufficient wet to be placed and compacted without difficulty with the means available.

4.3.3.4. Workability of the concrete should be controlled direct measurement of water content, making allowance for any surface water in the fine and course aggregates. The slump test may be conducted in accordance with good practice [VI-5(10)].

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 field methods in accordance with good practice [VI-5 (9)]*. In the absence of exact date 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 grade given in accordance with Table-3 shall not however, be placed in a higher grade on the ground that the test strengths are higher than the minimum specified. No interpolation shall be permissible.

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4.4. SAMPLE SIZE OF ACCEPTANCE CRITERIA.

4.4.1. All tests shall be carried out in accordance with good practice [VI-5 (4)]. +

4.4.2. The number of test specimens required, the frequency of the sampling and the criteria for acceptance of a concrete as conforming to the specified grade shall be in accordance with Table-5 for both ordinary concrete and controlled concrete. No preliminary tests are however necessary in the case of ordinary concrete.

IS 199-1959 methods of sampling and analysis of concrete?

***** IS 2386 (Part III) 1963 specific gravity, density, and voids absorption and bulking methods of tests for aggregate of concrete?

Specified density, gravity, voids absorption, and bulking.

- IS 516-1959 methods of tests for strength of concrete.

TABLE - 1. STRENGTH REQUIREMENTS OF CONCRETE

(CLAUSE 4.2.2.1 and 4.2.2.2) (All Values in kg/cm²)

Compressive strength of 15 cm cubes at 28 days after mixing conducted in accordance with good practice [VI 5(4)]~.

Grade of Concrete	Preliminary tests Minimum	Works test Minimum
M 100	135	100
M 150	200	150
M 200	250	200
M 250	320	250
M 300	380	300
M 350	440	350
M 400	500	400

NOTE 1: PRELIMINARY TEST:

A test conducted in a laboratory on the mix* of the concrete produced in the laboratory with the object of

nn. Designing a concrete mix, before the actual concreting operation starts.

oo. Determining the adjustments required in the designed mix when there is a change in the matter also used during the execution of work, or

pp. Verifying the strength of concrete mix.

NOTE 2: WORK TEST:

A test conducted either in the field or in laboratory on the specimens made out of the concrete being used on the works.

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NOTE 3: SIZE OF CUBES:

In the working test, with the approval of the Engineer-in-charge, 10 cm cubes may be used in place of 15 cm cubes provided the maximum nominal size of aggregate does not exceed 20 mm. Even the use of 15 cm cubes should normally be restricted to concrete having a maximum nominal size of aggregate not exceeding 40 mm. Where concrete with aggregates larger than 40 mm size is required to be tested, the size of cubes should be 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 cubes specimen.

NOTE 4: STRENGTH IN RELATION TO SIZE OF THE CUBE:

Where 10 cm cubes are used, the values obtained from tests on 10 cm cubes shall be reduced to the extent established by comparative preliminary tests with 10 and 15 cm cubes, or in the absence of such comparative tests, by 10 % of the value determined from the tests, in order to give the equivalent strength for 15 cm cubes, when cubes larger than 15 cm are adopted, generally no modification is necessary unless otherwise specified by the Engineer-in-charge.

~IS 516-1959 methods of test for strength of concrete?

NOTE 5: Cylinder strength-compressive strength test may, with the approval of the Engineer-in-charge, be conducted on 15 cm diameter and 30 cm high cylinders in accordance with good practice [VI-5 (4)*] instead of one cube, where cylinder strength figures adopted the compressive strength figures given above shall be modified according to the formula. Minimum cylinder compressive strength requires, 0.8, compressive strength specified for 15 cm cubes.

*THE CENTRAL BOARD RESEARCH INSTITUTE, New Delhi has carried out tests with a view to establishing a relation between water cement ratio and the compressive strength of concrete using ordinary port-land cements manufactured in the country confirming to accepted standards [VI-5 (2)].**

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 good practices [VI-5 (2)]**. These graphs have been given in Appendix-A as they would be some assistance in obtaining the water cement ratio for trail mixes of concrete.

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TABLE - 2: OPTIONAL WORKS TEST REQUIREMENTS OF CONCRETE

CLAUSE 4.2.2.2.(a) (All Values in kg/cm².)

All tests shall be conducted in accordance with good practice [VI-5(4)*].

Grade of Concrete	Compressive strength of 15 cm cubes minimum at 7 days	Modulus of rupture by Beams Test	
		At 72+2 hours	At 7 hours
M 100	70	12	17
M 150	100	15	21
M 200	135	17	24
M 250	170	19	27
M 300	200	21	30
M 350	235	23	32
M 400	270	25	34

NOTE:

Notes 3 to 5 under Table -1 are also applicable to this Table.

* IS 516-1959 Methods of test for strength of concrete.

- IS 269-1967 Specification for ordinary, rapid, hardening, and low heat port-land cement.

TABLE - 3.

CONCRETE MIX PROPORTIONS

(CLAUSE 4.3.3.) ORDINARY CONCRETE

Grade of Concrete	Total quantity of dry aggregates by volume per 50 Kg. of cement to be taken as the sum of the individual volumes of fine and coarse aggregates Max	Proportion of fine aggregate to coarse aggregate	Quantity of water per 50 kg of cement
M 100	300 litres	Generally 1:2 for fine aggregate by volume but subject to an upper limit of 1: 1½ and a lower limit of 1:3 *	34 litres
M 150	220 litres		32 litres
M 200	160 litres		30 litres
M 250	100 litres		27 litres

NOTE: It may be noted for general guidance that M 100, M 150, M 200 and M 250 of ordinary concrete correspond 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.

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* The proportions of the aggregate should be adjusted from upper limit to lower limit progressively as the grading of fine aggregate becomes finer and the maximum size of coarse aggregate becomes larger. Example, for an average grading of fine aggregate that is, Zone II in accordance with good practice [VI-5 (1)] # the proportion shall be 1:1½, 1:2 and 1:3 for maximum size of aggregate 10 mm, 20 mm and 40 mm respectively.

TABLE - 4.

SURFACE WATER CARRIED BY AVERAGE AGGREGATE

Aggregate	Approximate quantity of surface water lit/m³
Very wet sand	120
Modulate wet sand	80
Moist sand	40
*Moist gravel or crushed work	20 to 40

*Coarser the aggregate, less the water it will carry.

IS 383-1963 Specification for coarse and fine aggregates for natural sources for concrete.

IS 516-1959 Specification for natural and manufactured aggregates for use in mass concrete?

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ACCEPTANCE CRITERIA FOR CONCRETE (ALL GRADES)

PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
5	5	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 [for optional test see Table 2] subject to the conditions that only one out of five consecutive tests may give a value less than specified strength	3	3	3	3	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1[for optional tests see table 2] subject to the conditions that only one out of three consecutive tests may give a value less than specified strength but this shall not be less than 90 % of specified strength

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PRELIMINARY TEST				WORKS TEST						
Minimum No. of specimen from each batch [cubes]		Minimum frequency	Criteria for acceptance	Maximum No. of specimen taken from the same days work				Minimum frequency		Criteria for acceptance
7 days compressive strength test as an optional test if desired	28 days compressive strength test			7 days compressive strength test as an optional test if desired	28 days compressive strength test	72+2 hrs. test as an optional test if desired	7 days test as an optional test if desired	In terms of the quantity of concrete	In terms of period	
	10	For each batch with a minimum of three batches	Accept if average compressive strength of the specimens tested is not less than the compressive strength specified in Table 1 subject to the condition that the average compressive strength shall be more than the specified compressive strength in Table 1 by atleast the value of standard deviation* of the series of test	5	5	5	5	For every 150 m of concrete or part thereof	At such intervals as the Engineer-in-charge may decide. However, in the case of controlled concrete, samples shall be drawn on each day for the first 4 days of concreting and there after atleast once in 7 days of concreting	Accept if average strength of the specimens tested is not less than the strength specified in Table 1 [for optional tests see Table 2] subject to the condition that one out of five consecutive tests may give a value less than specified strength

* Standard deviation: Where d = Individual deviation from the average and n = Number of specimens tested.

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FOR TENDERER'S SPECIAL ATTENTION

131. Clean river sand shall be used in all cases.

132. Only clean fresh water shall be used on the work. The tenderer shall make their own arrangements for water and shall meet all charges therefore. The special attention of the tenderer is drawn to clause 39 of preliminary specification of the TNDSS regarding water and lighting.

133. The broken stone for concrete and RCC works should be of granite and passed by the Federation Engineer / Officer.

134. All iron work or steel work of every kind such as to be embedded in concrete shall immediately on arrival at the site be properly scrapped and wire brushed and given priming coat of approved lead painting without claim for extra.

135. The iron hold fasts shall be built up in walls in cement mortar 1:3 at the time of construction of walls. No extra claim shall be due for the same wherever hold fasts are to be provided to 9" thick walls. Those should be fixed with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and proper binding. No separate rate for such pockets of concrete filling at hold fast points will be allowed and this will be measured as masonry along with adjacent masonry.

136. The teak wood shall be best Indian teak wood only and shall be subject to inspection and approval by the Federation Engineer / Officer before use on the work. Country wood where specified shall be Karimarudu or Kongu for scantling and Aiyini for planks.

137. Holes for electric wiring, water supply and drainage etc., shall be provided as directed during progress of work without any claim for extra.

138. The work will be carried with the least hindrance to the adjoining building and the tenderer will be responsible for any damages, caused to the existing fixtures, electric fittings, etc. in the course of execution and the tenderer shall make good any damages without any claim for extra.

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139. In the case of `T' beams and `L' beams, the quantity shown in the schedule is the quantity of rib portion only. The top flange portion will be always measured with the general slab portion and paid for at the slab rate only. For all RCC works the rate shall include the treatment of bearing as per plate No. 2 of 1946 as per TNDSS (Page 3 of 1964 Edition).

140. CONCRETE WORK: All exposed concrete surfaces will be required to be finished by cement plaster as detailed in schedule `A'.

11.PLASTERING: All external corners, edges of beams, edges of doors and window openings shall be finished sharp using richer mortar and also finished truly vertical or horizontal as the case may be. The rate for plastering shall include the cost of finishing as above and no separate extra for the corners, edges, and beams etc., shall be paid.

12.If rates are not separately called for, for similar items of works in different floors, the tenderer should note that one rate is applicable for all floors indicated in the detailed plans. Any claims for extra for such items floor will not be entertained under any circumstances.

13.The General Manager reserves the right, to split up the work and entrust the main work, internal water supply and sanitary arrangements to different tenderers without assigning any reason therefore.

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.

15.a). The work in the Union executed by the tenderer, under the contract shall be maintained by the tenderers until the work is taken over by the Federation Engineer. The tenderer shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earthquake, other convention of nature and all other natural calamities risks arising out of acts of God during such period and that the Union shall not be liable for any loss or damage occasioned by or arising out of any such acts of God.

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b). Provided however that the tenderer shall not be liable for all or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion hostilities or war like operations (before or after declaration of war) rebellion, Ministry or usurped power.

REVENUE RECOVERY ACT

c). Whenever any amount has to be paid by the tenderer in view of termination of the contract by virtue of clause 87 (4) any amount that may be due or may become due from the tenderer under their presents and the tenderer is not responding to the demands for the payment of said amount, then the Union shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

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RISK INSURANCE

d). The work executed by the tenderer or under these contract shall be maintained by the tenderer's risk until the work is taken over the Federation Engineer. The Union should not be liable to pay for any loss or damages occasioned by (or) arising out of fire, flood, volcanic, eruption, earth-slake other conclusion 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 care such risks is lift to the tenderer.

The tenderer shall not be liable for all or any loss of damages occasioned by or out of acts of foreign enemies' invasions, hostilities or war like operation (before or after declaration of war) rebellion, military or usurped power.

ADDITIONAL SPECIFICATIONS

27. The arrangements of M.S. & RTS rods for all RCC works shall be in accordance with the working drawing supplied.
28. i). The planks for forms and centering for RCC works shall be of well seasoned timber approved by the Federation Engineer according to clause 10 of TNDSS No. 30. They must be made smooth and perfectly level at top so as to give smooth and even finish to the RCC ceilings. Alternatively, the tenderer may use steel sheets over wooden forms provided the required finish to the outside of the slab is obtained. Mango planks shall not be used under any circumstances. Centering and form work shall be provided to the extent and area ordered by the Federation Engineer during execution.

    ii). Payments for centering works for all RCC items shall be made only after the concrete is laid, even though separate items for centering works are included in the schedule. The centering and form shall be provided to the extent and area ordered by the Federation Engineer during execution.

    iii). All cement concrete for RC works shall be machine mixed and vibrated.

    iv). All lime mortar shall be ground in mortar well as per TNDSS.

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ADDITIONAL CONDITION

SPEC.FOR SANITARY, DRAINAGE AND WATER SUPPLY ARRANGEMENTS

144. Water closets, basins, urinals, sinks and other sanitary-ware shall be approved make as required in the relevant items. The fixing of these shall be in accordance with the specification attached.

145. The rates shall include all dismantling, making holes in walls or slabs, and restoring the structure to the original conditions after the completion of the work.

146. The work should be carried out with least hindrance to the adjoining buildings and the tenderer shall be responsible for any damage caused to the existing fixtures, electrical fittings etc. in the course of execution and the tenderer shall make good any such damage without claim for extra.

147. The rate for laying stoneware pipes shall include necessary earthwork excavation for trenches (irrespective of nature of soil and depth) and all incidental charges such as shoring, strutting and balling out water, refilling trenches after the completion of work and consolidating, removing the surplus earth to places shown within the compound and making good the damages to roads and other structure.

148. The rate for laying GI Pipes and CI Pipes (or PVC Pipes) shall include earthwork for trenching and refilling them and fixing with wooden plugs, GI /CI clamps and brass screws where the pipes are fixed to walls. The rates for the pipes shall also include wrapping them with tarred tape where they are buried in earth tarring the portions embedded in masonry and painting with white lead two coats for portions above ground level.

149. The clamps for GI Pipes, fittings should not be spaced more than 150 mm apart. The wooden plugs for pipe and bracket fittings should be properly fixed in CM 1:3 in holes made in masonry with the wide and wedge shaped plugs inside and not hammered with them and into walls. The size of plugs should not be less than 1 square inch at one end and 1½ square inch at other end with a depth not less than 9 inch.

150. Paint with two coats of best white glazed paint or any other colour approved by the Federation Engineer over a priming coat of red lead to all flushing tanks, brackets, clamps used for fixing pipes and all lead connections.

151. The tenderer should employ sufficient number of qualified licensed plumber with necessary experience and skill in the trade to the satisfaction of the Federation Engineer concerned for execution of water supply and sanitary fittings of work.

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152. The Indian Type Water Closet shall be with `P' or `S' trap and glazed earthenware footrests it shall be fixed in position of floor level in a bed concrete brick jelly in lime mortar 1:2 so as to completely embed the closet, trap and footrests. The existing masonry structure after dismantling the floor making the holes etc. shall be restored to its original conditions after completing the work. The flooring round the closet shall be finished off in cement mortar with adequate slope all round for drainage into as per the sanitary Engineer's type design. The footrests should be fixed at an angle as per standards.

153. The PVC flushing tanks shall be of three gallons capacity of Indian make (confirming to ISI specification) supported on CI brackets with necessary GI chain and handle for pull float bell valve ½" PVC connections to the water main and closet including prior to the white glazed paint two coats over a priming coat of red lead.

154. The fixing of water closet shall include the dismantling of existing floor wherever indicated making holes in masonry walls etc. and restoring 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.

ADDITIONAL CONDITION FOR TENDERER'S SPECIFIC CONDITION

If at any time the Federation Engineer shall be of the opinion that the tenderer is delaying commencement of the work or violating any of the progress of work is defined by the tabular statement rate of progress in the article of agreement the Federation Engineers shall also advise the tenderer in writing and at the same time demand compiled. If the tenderer neglects to comply with such demand within 7 days after the receipt of the notice it shall those or at any time thereafter be lawful for the General Manager, to determine the contract. Which determination shall carry with the forfeiture of the security deposit and total sum 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 sums as shall be assessed by the Federation Engineer.

The water for the works shall be as far as practicable free from earth vegetable or organic matter and from salts or other substance likely to interfere with the setting of mortar or otherwise prove harmful to the work.

All terms of works shall be done in accordance with relevant classes of TNDSS and addenda volume to the TNDSS or addenda from time to time.

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The tenderer shall be responsible for the safe custody of all the departmental materials once they are handed over to the tenderer at the departmental stores. The cost of any materials in the custody of the tenderer stolen, destroyed or damaged or if rendered unfit for the work will be recovered from the tenderer at the issue rate.

For testing the concrete and aggregate the tenderer must procure the following equipment and make them available at site.

nnnnn) Steel mould for 45 cm cubes of concrete (the mould will be in two halves for easy removal).

ooooo) Slump cone for testing consistency (slump test) the cone will be 30 cm height truss castled cone with top and bottom diameters of 20 cm and 30 cm respectively. In addition a steel rod 25 cm dia and 50 cm in length and with tamping and rounded is to be procured.

ppppp) For finishing fineness moulds, and coarse aggregate expand operated over apparatus may be procured along with weighing machine for weighing the aggregate and sand.

qqqqq) In the case of any breach of the terms of the contract the contract will be closed at the risk of cost of the tenderer in addition to the forfeiture of the EMD and security deposit.

rrrrr) The testing is to be done at the tenderer's cost for all building materials and also for concrete cubes.

sssss) The work shall be executed and measured as per metric dimension given in the schedule of quantities, drawings etc. (F.P. Units where indicated are for guidance only).

ttttt) Unless otherwise specified all the rates quoted by the tenderers shall be for works at all levels of the buildings.

uuuuu) Rates for every item of works to be done under this contract shall be for all lifts and leads, heights, depths, lengths and widths except when specifically mentioned in the item, otherwise nothing extra will be paid on this account.

vvvvv) The rate for all item in which use of cement is involved is inclusive of charges for curing.

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ADDITIONAL CONDITIONS

WATER SUPPLY FOR CONSTRUCTION AND OTHER USE

Unless otherwise specified the tenderer shall make their own arrangement for water for the work and nothing extra shall be paid for the same.

The water used by the tenderer shall be fit for drinking as well as construction purposes to the satisfaction of the Federation Engineer.

The tenderer may be allowed to construct temporary tube well / open well in the project site for getting water after he has got written consent of the Federation Engineer. The tenderer shall be required to provide necessary arrangements to avoid any accident or damage to the buildings, roads and service lines adjacent to the tube well / open well sunk. The tenderer shall dismantle the tube well / open well after completion of work and restore the ground to its original condition at their cost.

In case the Union supplies water, it shall be on the following conditions:

40. Water charges at 0.50 % shall be recovered from the gross amount of water involved items from each interim bill.
41. The water shall be provided at one point in the site at the discretion of the Engineer. The tenderer shall make their arrangement for water connection and distribution pipelines in the construction area.
42. The Union shall not guarantee the maintenance of uninterrupted water supply. It will be the responsibility of the tenderer to make alternative arrangements for water supply at their own cost in the event of any breakdown so that the progress of work is not affected for want of water. No claim or damage or refund of water charges shall be entertained on account of such breakdown.

POWER (ELECTRICITY) SUPPLY

Unless otherwise specified the tenderer shall have to make his own arrangements for the power supply at his own cost. All the works shall be done as per IEA rules. The temporary lines shall be removed by the tenderer at his cost after the completion of the work or if there is any hindrance, to the other works due to the alignment of these lines, during the contract period.

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In case the Union provides the power supply, it shall be on the following conditions:

66. The supply shall be made at one point in the site at the discretion of the Engineer. The tenderer shall make their own arrangement to carry and distribute the power wherever it is required within the site as per IEA rules.
67. An Energy Meter shall be installed at the site by the tenderer for recording the power consumed by the tenderer and the same shall be recovered at the prevailing rate of supply of Electricity by the local electricity board or other local authorities as the case may be.
68. If at any time during the period of contract the Energy meter is found to be faulty the electricity charges shall be recovered from the interim bills of the tenderer at 0.50 % of the value of work done during that particular period.
69. Power required for commissioning and trial runs of the plant shall be supplied free of cost.
70. The temporary supply lines shall be removed and the tenderer shall clear the site after the completion of the work at their own cost.

SCHEDULE `A'

SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

The quantities given here and those upon which the lump-sum tender most of the work is based but they are subject to alteration, omissions, deductions and additions as provided for in the condition of their contract and do not necessary to show the actual quantities of work to be done. The unit rates noted below is this governing payment for extras or deductions or omissions according to the conditions of contract as set for in the preliminary specifications of the Tamil Nadu Detailed Standard Specification and other condition of specification of the contract.

It is to be expressly understood that the measured works is to be taken net (not standing any custom or practice to the tenderer) according to the drawing or as may be ordered from time to time by the Federation Engineer and the cost calculated by measurement or weight.

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LEAD STATEMENT

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr. CAPACITY BMC AT KONDAMPATTI MPCS, COIMBATORE DISTRICT

S. No	Description of materials	Lead in km	Source
1	Sand for mortar / filling	130	Viswanathapuri
2	Rough stone for masonry works	10	Local
3	Bond stones	10	Local
4	HBGS Jelly (ISS) machine crushed / hand broken	10	Local
5	Gravel	20	Local
6	Bricks second class table moulded chamber burnt 9” x 4½” x 3”	40	Kanuvai
7	Brick Jelly	40	Kanuvai
8	Lime stone	20	Local
9	Pressed tiles 23 x 23 x 2 cm	20	Local
10	Cement & Steel	20	Local

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PART-B
COMMERCIAL BID
SHOULD BE SEPARATED

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CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KONDAMPATTI MPCS, COIMBATORE DISTRICT

THE COIMBATORE DIST. COOP. MILK PRODUCERS'UNION LTD.
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO),
COIMBATORE-641 010.

Signature of the Contractor

CDCMPU Limited

NEW DAIRY COMPLEX,
PACHAPALAYAM,KALAMPALYAM(PO),COIMBATORE-10

TWO PART TENDER

PART – B

COMMERCIAL BID

CONSTRUCTION OF BUILDING FOR ACCOMMODATING 5000 Ltr.CAPACITY BMC AT KONDAMPATTI MPCS, COIMBATORE DISTRICT

Signature of the Contractor

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2.	QUALIFICATION
3.	PRICE SCHEDULE

Signature of the Contractor

ISSUE LETTER FOR TENDER DOCUMENT

PART –B

COMMERCIAL BID

This Two Part tender document set containing of Part – B Commercial bid.

Issued to:

_____

_____

_____

_____

For and on behalf of

THE COIMBATORE DISTRICT COOPERATIVE
MILK PRODUCERS' UNION LIMITED,
NEW DAIRY COMPLEX,
PACHAPALAYAM, KALAMPALAYAM(PO)
PERUR (VIA), COIMBATORE-641 010.

ISSUED BY;

GENERAL MANAGER

Signature of the Contractor

QUALIFICATION

The Part-B commercial offers of such of those tenderer who qualify themselves for being considered for the work of **"Construction of building for accommodating 5000 Ltr. capacity BMC at Kondampatti MPCS, Coimbatore District "** by fulfilling the entire terms and conditions as laid in Part - A "Technical Bid" of this tender, will be considered for opening of Part-B commercial bid.

Other commercial offers not qualifying as above will be rejected outright.

GOODS AND SERVICE TAX :

The tenderer should furnish Goods and Service Tax Registration certificate. The tenderer should quote the amount towards GST. If not quoted it will be considered that the rate quoted is inclusive of GST.

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THE COIMBATORE DIST.COOP.MILK PRODUCERS"UNION LTD, CBE-10

Name of the work : Construction of building for accommodating 5000 ltr.capacity BMC at Kondampatti MPCS, Coimbatore.

SCHEDULE „ A"

S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
1	22.00 m^3	Earth work excavation for foundation (for narrow excavation) in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the surplus earth within the compound in places shown by the departmental officers with an initial lead of 10 mts and initial lift of 2 mts. and refilling the sides,cleaning and leveling the site, etc., complete complying with standard specification.		1m^3 (One Cubic Metre)	
2	14.00 m^3	Earth work open excavation in all soils and sub-soils and to full depth as may be directed except in rock requiring blasting inclusive of shoring shuttering, bailing out water wherever necessary and depositing the excavated earth with a lead of 10 mts. within the compound in places shown by the departmental officers and clearing and levelling the site, etc., complete complying with standard specification. Earth work open excavation in all soils and sub soils with an initial lead and lift etc., complete.		1m^3 (One Cubic Metre)	
3	6.00 m^3	Supplying and filling with M-Sand for basement to required thickness, watered, well rammed and consolidated etc. complete complying with standard specification and as directed by the departmental officers.		1m^3 (One Cubic Metre)	

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No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
4	24.00 m^3	Supplying and filling with gravel for foundation and basement to required thickness, watered, well rammed and consolidated, etc., completed as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	
5	8.50 m^3	Plain Cement Concrete 1:4:8 (One Cement, Four M-sand and Ten hard broken stone jelly) using 40 mm gauge hard broken granite stone jelly for foundation and flooring the top surface rough to receive the floor including dewatering wherever necessary and laid in layers of not more than 15 cm thick well rammed, consolidated and curing etc. complete complying with standard specification.		$1m^3$ (One Cubic Metre)	
6		Brick work in Cement Mortar 1:5 (one part cement and five parts M-sand) using best quality II class Ground moulded chamber burnt bricks of size 9" x 4-1/2" x 3" to line, level and to plumb on one face including necessary scaffolding, racking out joints, curing etc., complete as directed by the departmental officer and as per standard specification.			
	12.00 m^3	a) Foundation and Basement		$1m^3$ (One Cubic Metre)	
	17.20 m^3	b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
7		Supplying , erection and steel centering for all RCC works using M.S Sheet, M.S. angles casurina props C.W.joints for all type of RCC works (ie) beams, roof slab, lintel, column footing, column & roof beam etc., including necessary supports with all cross bracing, filling the slits and holes the reprieved materials should be taken by the contractor and side shuttering etc., complete as directed by the departmental officers.			
	5.50 m^2	a) Up to basement – Column surfces		1m^2 (One Square Metre)	
	36.00 m^2	b) Up to basement – Plain surfces		1m^2 (One Square Metre)	
	29.50 m^2	c) above basement – 0 to 3.30m - Plainsurfaces		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
8	9.50 m^3 2.50 m^3	Reinforced Cement Concrete 1:2:4 (One Cement, Two M-sand and Four hard broken stone jelly) using 20 mm gauge machine crushed hard broken granite stone jelly for all RCC items of works excluding cost of reinforcement grill and fabricating charges, centering and shuttering but including laying, vibrating with mechanical vibrators, finishing, curing, etc. complete complying with standard specification and as directed by the departmental officer. a) Foundation and Basement b)above basement up to 4.50m ht.		$1m^3$ (One Cubic Metre) $1m^3$ (One Cubic Metre)	
9	12.00 Qtl	Supplying, fabricating and placing in position of reinforcement, grills for all RCC works including cost of steel and binding wire , cutting and tying etc., complete as directed by the departmental officers. MS / RTS rods in all floors		1Qtl (One Qunital)	
10	3.45 m^3	Plain Cement Concrete 1:2:4 (one cement, two M-sand and four hard broken stone jelly) using 20mm jelly for the machinery bed, flooring and other bed blocks works and flooring including curing (excluding centering) etc., complete as per standard specifications and as directed by the departmental officers.		$1m^3$ (One Cubic Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
11	2.45 m^2	Supplying and fixing of cuddapah slab 38 / 40mm thick including cutting and polishing on both side etc.,complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
12		Supplying and laying of unpolished one side and other side polished machine cut modikuppam Paradise granite slab of size 600x450x30/50mm thickness laid over a cement mortar 1:3 (One cement and three m-sand)-20mm thick including conveyance, cutting, laying, curing and pointing the joints with white cement mixed with matching colouring pigments etc., complete as directed by departmental officers.			
	39.80 m^2	a) 30 mm thick		1m^2 (One Square Metre)	
	8.30 m^2	b) 50 mm thick		1m^2 (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
13	9.20 m^2	Supplying and fixing of steel rolling shutter (pull and push type) with ISI make of approved quality with MS lathes 75mm wide and 18 gauge GI sheet thick to a different sizes including all accessories like sliding groves, shafts, springs, bearings, hood and locking arrangements and grouting the side and top assembly with walls and beams etc. complete and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
14	7.20 m^2	Fabricating, Supplying and fixing in position of steel sheeted windows (Three Leaves) with the following specifications. Outer frames of windows made of 'Z' section F7D of size 33 x 25 x 3mm at 1.419 kg/ m and mullion 'J' section (F4B) of size 46x25x3mm at 2.28kg/m and shutter section of made of F7D of 33x25x3mm at 1.419 kg/m as specified in IS 7452/1990. Each openable shutter should not exceed a width of 600mm to enable separate operations and easy maintenance. The panel of the shutters to be covered with 18 gauge cold rolled sheet of superior quality and welded intact with shutter frames. Horizontal stiffeners using 18x5mm MS Flat at 0.70kg/m at 3 Nos. for each shutter and additional diagonal stiffeners of the same MS flats at all the four corners of each shutters to the suitable length welded to the shutters, for holding the CR Sheets in position firmly etc complete as directed by the departmental officers.		$1m^2$ (One Square Metre)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
15	108.00 Kg	Supplying and fixing in position of mild steel grills for following size square rod and cutting, welding including priming coat etc complete as directed by the departmental officers.		1Kg (One Kilo gram)	
16	31.50 m^2	Dadooing walls with printed design colour glazed tiles of size 300mm x 200mm x 6mm laid in Cement Mortar 1:2 (One Cement and Two M-sand) 10mm thick and pointing the joints with white cement mixed with colouring pigments at the rate of 0.40 Kg. / sq.m. neatly in all floors, curing, etc., complying with standard specification and as directed by the departmental officers. (Required shape and design) etc.,		$1m^2$ (One Square Metre)	
17	480.00 Kg	Fabricating, Supplying and fixing in position of mild steel (RHS) Rectangular steel hollow section following thickness and M.S channel sizes of 150mmx75mmX5.7mm thickness for loading dock area including cutting, welding and fixing in purlin etc., completed as directed by the departmental officers.		1Kg (One Kilo gram)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
18	58.00 m^2	Supplying and fixing in position of Powder coated galvalume colour sheet of 0.47mm thickness with necessary bolts, nuts and washers, metal screws etc. complete with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
19	52.00 m^2	Special ceiling plastering Cement Mortar 1:3 (One Cement and Three P-Sand) 12mm thick including hacking the surfaces, providing cement mortar nosing, beading for sunshades, staircases, steps, landing slabs and curing, etc., in all floors complying with standard specification and as directed by the departmental officers		$1m^2$ (One Square Metre)	
20	251.00 m^2	Plastering with Cement Mortar 1:5 (One cement and Five P-sand), 12mm thick in all floors including curing and scaffolding etc. complete complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
21	20.00 m^2	Plastering with Cement Mortar 1:3 (One Cement and Three P-Sand) 20mm thick mixed with water proofing compound conforming to BIS at 2% by weight of cement used including finsihing, curing, etc., complete in all floors complying with standard specification and as directed by the departmental officers.		$1m^2$ (One Square Metre)	
22	1.00 No	Supplying and fixing in position CI manhole covers with CI frames (Heavy duty) of size 60cm x 60cm of best approved quality as directed by the departmental officers with standard specifications.		1 No. (One Number)	

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S.No	Qty	Description of item	Rate in figures and in words	Unit	Amount Rs. Ps.
23	58.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (interior) of first class quality and of approved colour over a priming coat including thorough scrapping, clean removal of dirt, and including necessary plaster of paris putty, wherever required etc., complete complying with standard specification.		1m^2 (One Square Metre)	
24	156.00 m^2	Painting two coats of newly plastered wall surface with ready mixed plastic emulsion paint (exterior) of first class quality and of approved colour over one coat of priming coat including scaffolding charges etc., complete complying with standard specification and as directed by the departmental officers.		1m^2 (One Square Metre)	
25	62.35 m^2	Painting two coats of new iron work using ready mixed synthetic enamel paint of approved quality and colour over a priming coat etc. complete as directed by the departmental officers. (such as steel window, Grill , M.S Channel & rolling shutter ets.,)		1m^2 (One Square Metre)	

GST

(Twenty Five items only)

Signature of the Contractor