



GOVERNMENT OF TAMIL NADU

WATER RESOURCES DEPARTMENT

**OFFICE OF THE SUPERINTENDING ENGINEER, W.R.D.,
PERIYAR VAIGAI BASIN CIRCLE, MADURAI**

TENDER DOCUMENT

**Name of work: MODERNISATION OF RIGHT MAIN CANAL
OF MARUDHANADHI DAM IN
AYYAMPALAYAM VILLAGE OF AUTHOOR
TALUK IN DINDIGUL DISTRICT (EXCEPT
BED AND CANAL LINING)**

**Officer of inviting Tender :-
The Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai.2.**

ANNEXURE**PARTICULARS TO BE FURNISHED BY THE TENDERER**

1. Name of the tenderer and address :
2. Name of work
3. Date of tender :
4. Total value of tender :
5. Details about E.M.D. enclosed for this tender and its validity :
6. Registered class of the tenderer with monetary limit and department in which registered. Certified copy of the registration should be attached. :
7. Recent work (details about name and place of work, value of the work etc., should be furnished) :
8. Works under execution (details about name and place of work value of the work etc., should be furnished) :
9. Command of labour in brief :
10. Turnover of previous year (Particulars for a period of three consecutive years to be furnished) :
11. Whether Income Tax clearance certificate is enclosed. If not when it will be produced? :
12. (i) Sales Tax Registration Number :
(ii) Whether Sales Tax clearance certificate is enclosed? If not, when it will be produced? :

13. In case of registered co-operative societies they should furnish name of the nominee with their credential details at the time of tender itself. They should also certify, that the nominee of the society is not a registered contractor in the Dept. :

14. TECHNICAL ASSISTANT DETAILS

1. Name :
- Qualification certificate
- Experience certificate :

2. Name :
- Qualification certificate Experience certificate :

OR

1. Name :
- If retired Civil Engineer, Designation and date of retirement (copy to be enclosed) :

15. Any other details :

NOTE : The consent letter from the **Technical Assistant proposed to be employed** should be obtained and enclosed with the tender.

APPENDIX-1 TENDER NOTICE (FOR L.S.CONTRACT)
(As amended in G.O.Ms.No.618 PW dt.30.4.85
G.O.Ms.No.1660 PWD dt.12.10.88, No.813 PWD dt.28.4.89) and
G.O.Ms.No.446 Finance (Salaries) Dept. dt.26.9.2000

1. On behalf of the Governor of Tamilnadu, Tenders will be received by the Superintending Engineer, W.R.D., Periyar Vaigai Basin Circle at his office at Madurai up to **3.00 PM** on **27.07.2022** for the work of “

“MODERNISATION OF RIGHT MAIN CANAL OF MARUDHANADHI DAM IN AYYAMPALAYAM VILLAGE OF AUTHOOR TALUK IN DINDIGUL DISTRICT (EXCEPT BED AND CANAL LINING)”

1.1 The tenders should be in the prescribed form obtainable from the Superintending Engineer's office. The tenders will be opened by the Superintending Engineer, WRD., Periyar Vaigai Basin Circle, Madurai at the place and on the date afore mentioned.

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

2 Tenders must be submitted in sealed covers, and should be addressed to the Superintending Engineer, W.R.D., Periyar Vaigai Basin Circle, Madurai, the name and address of the tenderer and the name of the work being noted on the cover.

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

3 Each tenderer must also send a certificate of Income Tax Verification from the appropriate Income Tax authority in the form prescribed there for. The certificate will be valid for one year from the date of issue, of all tenders submitted during the period.

3.1 In the case of proprietary or partnership firm, it will be necessary to produce the certificate afore mentioned for the proprietor or proprietors and for each for the partners as the case may be.

3.2 If the tenderer is a registered Water Resources Department / Public Works Department contractor and if a certificate for the current year had already been produced by him during the calendar year in which the tender is made, it will be sufficient, if particulars regarding the previous occasions on which the said certificate was produced are given.

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

4. Each tenderer must pay, as Earnest Money, a sum of **Rs. 80,000/- (Rupees Eighty Thousand only)** into the branch of State Bank of India or into the Govt. Treasury or Sub-Treasury within the jurisdiction of the Executive Engineer concerned to the credit of Revenue deposits on behalf of the **Executive Engineer, W.R.D., Manjalar Basin Division, Periyakulam** and enclose with his tender, the chalan endorsed accordingly. The Earnest money deposit can also be paid in any other form as may be approved by the State Government from time to time as per Para 155 of T.N.P.W.D. Code (i.e.) In the shape of Demand Draft, Bankers Cheque, specified small savings Instruments or where the procuring entity deems fit, in a prescribed form. Any tender submitted without the Earnest Money Deposit in the above approved form be summarily rejected. Any category of tenderers specifically exempted by the Govt. from the payment of Earnest Money Deposit will not be required to make such a deposit.

The earnest money will be refunded to the unsuccessful tenderer on application, after intimation is sent of rejection of the tender or at the expiration of three months (90 days) from the date of tender, whichever is earlier. This refund will be authorised by the Superintending Engineer by suitable endorsement on the chalan. The earnest money will not be received in cash or currency notes by the P.W.D. Officers.

4.1 The Earnest Money will be retained in the case of the successful tenderer and will not carry any interest. It will be dealt with as provided in the tender.

5. The tender will remain valid for a period of 90 days from the last date for receipt of tender. The validity period can be extended further, if the contractor gives his consent in writing, specifying the period of extension.

5.1 The tenderer whose tender is under consideration, shall attend the Superintending Engineer's Office before the end of the period specified by written intimation to him. In case, the tenderer fails to attend the office before the end of the specified period, his tender will not be considered. He shall forthwith, upon and intimation being given to him of acceptance of his tender, by the officer duly authorised in this behalf under article 299 (1) of the constitution herein after called "the accepting authority" make security deposit of 2% of the value of contract in one of the forms prescribed in Tamilnadu Public Works Account code (ie) by taking into account of the amount of EMD already deposited with the tender it would be sufficient to pay the balance amount to make up the 2% of the value of contract for the purpose of Security deposit. The Security Deposit can also be paid in the approved form as laid down in the preceding paragraph No.4

5.2 The security deposit together with Earnest Money Deposit and the amount withheld according to clause 64-1 of General conditions to the contract, shall be retained as Security for due fulfilment of contract.

5.3 On receipt of written communication of acceptance of tender, if the tenderer fails to pay the requisite security deposit within the period specified in the written communication or backs out from tender or withdrawal his tender, the Earnest Money Deposit shall be forfeited to the Govt.

5.4 If the contractor fails to carryout the contract, after paying the requisite deposits, then he will be liable for the excess expenditure if any incurred to complete the work as contemplated in the general conditions to the contract.

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

6. The tenderer shall examine clearly the Tamilnadu Building practice and also the General conditions to contract contained therein, and sign the divisional office copy of the Tamilnadu Building practice and its addenda volume, in token of such study before submitting his tender unit rates, which shall be for finished work in situ. He shall also carefully study the drawings and additional specifications and all the documents connected with the contract. The Tamilnadu Building Practice and other connected documents with the contract such as specifications, plans, descriptive specification sheet regarding materials etc., can be seen at any time between 10.00 AM and 5.45 PM on office days in the office of the Superintending Engineer, W.R.D., Periyar Vaigai Basin Circle, Madurai

A copy of the set of contract document can also be had on payment of Rs. 15,000/- + GST Rs. 2,700/- or each set.

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

8. Every tenderer is expected before quoting his rates, to inspect the site of the proposed work. He should also inspect the quarries and satisfy himself about the quality and availability of materials. The names of quarries and kilns. etc., where from certain materials are to be obtained will be given in the descriptive specification sheet. The best class of materials to be obtained from the quarries or other source, defined shall be used on the work. In every case the materials must comply with the relevant standard specifications. Samples of materials as called for in the standard specification or in this tender notice or as required by the Executive Engineer in any case shall be submitted for the Executive Engineer's approval, before the supply to site of work is begun. If the contractor after examination of the source of materials defined in the descriptive specification sheet is of the opinion that materials complying with the standard or other specifications of the contract can not be obtained in quality or sufficient quantity, from the source defined in the descriptive specification sheet, he shall so state in his tender and state where from he intends, to obtain materials, subject to the approval of the Executive Engineer.

8.1 The Govt. will not, however after acceptance of contract, rate, pay any extra charges for lead or for any other reasons in case the contractor is found later on to have misjudged the materials available. Attention of the contractor is directed to the "General conditions to the contract" regarding payment of seigniorage, tolls, etc.,

8.2. The sand is available at near by site for the construction of Bed Dam across vaigai river only and the cost of sand for Bed dam work will be recovered from the bill. Sand will be procured by the contractor for other works.

9. The tenderer's particular attention is drawn to the sections and clauses in the General Conditions to the contract dealing with:

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

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

10. A schedule of quantities accompanies this tender notice. It shall be definitely understood that the Govt. does not accept any responsibility for the correctness or completeness of this schedule and that this schedule is liable to alterations by omissions, deductions or additions at the discretion of the Executive Engineer, P.W.D., concerned Division or the Superintending Engineer, W.R.D., Periyar Vaigai Basin Circle, Madurai as set forth in the conditions of contract. The tender will, however, base his lump-sum tender on this schedule of quantities. He should quote specific rates for each item in the schedule and the rates should be in rupees and in sums of five paise. The rates should be written both in words and figures and the units in words.

10.1 The tenderer should also show the totals of each item and the grand total of the whole contract and quote in the tender, a lump sum for which he will undertake to do the whole work, subject to the conditions of contract, such lump-sum agreeing with the total amount of 'Schedule A'. This schedule accompanying the lump-sum tender shall be written legibly and free from erasures, overwriting or conversion of figures. Corrections where unavoidable should be made by crossing out, initialling, dating and rewriting.

10.2 In the event of the work being transferred to any other Circle / Division / Sub-division, the Superintending Engineer / Executive Engineer / Asst.Exe.Engineer who is in charge of Circle / Division / Sub-division having jurisdiction over the work shall be competent to exercise all the powers and privileges reserved in favour of Govt.

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

12. The tenderer should workout his own rates, without reference being made to the Public Works Dept. current scheduled rates or the Public Works Department estimate. However in case of tenders called for under percentage rate tender system, the tenderer should workout his own rate, but quote his percentage rate above or below the total estimated cost of work of the department indicated in the tender schedule.

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

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

Period after date of Commencement	Percentage of work completed based on Contract lump sum amount
Vide Separate sheet enclosed.	

Note: The periods to be entered in Col. I for the purpose of defining the rate of progress may be fixed by the Superintending Engineer or Executive Engineer to suit each case.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

RATE OF PROGRESS ANNEXURE

MILE STONE –I

In the first milestone the following physical works are to be completed.

Sl. No.	Physical works to be completed	Period from the date of issue of notice to proceed with work
1	Earth work in excavation and embankment (combined quantity) - 15000 m ³	3 Months
2	Cement Concrete - 750 m ³	3 Months

MILE STONE –II

In the 2nd milestone the following physical works are to be completed.

Sl. No.	Cumulative physical works to be completed	Period from the date of issue of notice to proceed with work
1	Earth work in excavation and embankment (combined quantity) - 21000 m ³	6 Months
2	Cement Concrete - 900 m ³	6 Months

MILE STONE –III

In the 3rd milestone the following physical works are to be completed.

Sl. No.	Cumulative physical works to be completed	Period from the date of issue of notice to proceed with work
1	Earth work in excavation and embankment (combined quantity) - 32098.47 m ³	9 Months
2	Cement Concrete - 1473.06 m ³	9 Months

“Completion of the entire specified work” in 9 months

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

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

17. The Superintending Engineer / Executive Engineer or other sanctioning authority reserves the right to reject any tender or all the tenders without assigning any reasons therefor.

18. The tenderers who are themselves not professionally qualified shall undertake to employ qualified technical men at their cost to look after the work. The tenderers should state in clear terms whether they are professionally qualified or whether they undertake to employ technical men required by the department, specified in the schedule below for the work.

In case the selected tenderer is professionally qualified or has undertaken to employ technical men under him, he should see that one of the technically qualified men 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 demand special attention (e.g.) reinforced concrete works etc.,

The norms for the employment of Technical Assistant and Penalty for non-employment of such Technical Assistant etc., is furnished in the format below:

Scale and Qualification for employment of technical staff:

Sl.No.	Value of Contract	Qualification and No. of Technical Assistants to be employed
1	From Rs.1.00 Lakh upto Rs.5.00 Lakhs	i) One diploma holder in Civil Engineer (or) ii) Not less than one retired Junior Engineer.
2	From Rs.5.00 Lakhs upto Rs.10.00 Lakhs	i) One B.E. (Civil) (or) ii) Equivalent degree holder (or) iii) Not less than one retired Asst.Exe.Engineer / Sub-Divisional Officer / Asst.Divisional Engr. (or) iv) One Diploma holder with three years experience.
3	From Rs.10.00 Lakhs upto 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 Engg. (or) iii) Not less than one retired Sub-Divisional Officer / Asst. Exe.Engineer / Asst.Divisional Engineer plus one diploma holder in Civil Engg. (or) iv) Two Diploma holders in Civil Engg. with 3 and 5 years experience respectively.
4	From Rs.25.00 Lakhs upto 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 holders with 3 years experience plus two Diploma holders in Civil Engg./ Two retired Junior Engineers(or) iv) One retired S.D.O./Asst.Exe.Engr. / Asst.Divisional Engineer plus two Diploma Holder in Civil Engg. (or) v) One retired S.D.O./Asst.Exe.Engr. / Asst.Divisional Engineer plus two retired Junior Engineers.

Contractor

Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.

Sl.No.	Value of Contract	Qualification and No. of Technical Assistants to be employed
5	Above Rs.50 Lakhs	as per clause 5 of Information and instruction of pre-qualification.

NOTE:

- i) Items 1, 2,3,4,5, and 6 should be scored out in case where not applicable to the particular work.
- ii) A penalty of Rs.2000/- per month, for diploma holder and Rs.5000/- per month for degree holder be levied in case of default on the part of contractors in following the norms laid down above.
- iii) The employment of Technical Asst. could be based only on the value of contract Engineers with Mechanical Engineering qualification and retired from Civil Engg. Dept. are also suitable to supervise the Civil Engineering works because of their experience in Civil Engineering field.
- iv) In case the contractor who is professionally qualified is not in a position to remain always at the site of work and to pay extra attention to such work as may demand special attention [(e.g.) RCC works etc.] he should employ technically qualified man as prescribed above.
- v) It will not be incumbent on the part of the contractor to employ Technical Assistant / Assistants when the work is kept in abeyance due to valid reasons and if during such period, in the opinion of the Executive Engineer, the employment of Technical Assistant / Assistants is not required for the due fulfilment of the contract.
19. Tenderers who have not already registered themselves as P.W.D. contractors shall furnish evidence of good record and capacity to do works.
20. A Tender submitting a quotation which the tender accepting authority considers excessive and / or indicative of the insufficient knowledge of current prices or definite attempt at profiteering will tender himself liable to be debarred permanently from tendering or for such period as the tender accepting authority may decide. The tender rates should be based on the controlled price for materials, price permissible for the tenderer to charges a private purchaser, under the provision of clauses 8 of boarding and profiteering prevention ordinance 1943 as amended from time to time and on similar principles in regard to labour and Supervision in the construction.
21. The contractor should offer employment to ex-toddy tappers as far as possible. The No. of ex-toddy tappers to whom he can so offer employment should be mentioned in the tender and he should undertake in the agreement to offer such employment to such number.

Note: This paragraph should be scored out if the cost of the work involved is less than Rs.10, 000/-

22. The contractor shall comply with the provisions of the Apprentices Act 1961 and the rules and orders issued there under, from time to time. If he fails to do so, his failure will be a breach of the contract and the competent authority, may at his discretion, cancel the contract or invoke any of the penalties for the breach of contract provided in the conditions of contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the Act, contractor shall, during the currency of the contract, ensure engagement of the apprentices in the categories mentioned below who may be assigned to him by the Director of Employment and Training / State apprenticeship Advisor, Tamilnadu. The contractor shall train them as required under the Apprentices Act 1961, and the rules made there under and shall be responsible for all obligations of the employer under the said Act including the liability to make payments to the apprentices as required under the said Act.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Value of contract	Category	No. to be appointed
Rs.1 lakh and up to	1. Building Constructor	1
Rs.3.00 lakhs	2. Brick layer	1
Above Rs.3.00 lakhs and up to Rs.10.00 lakhs	1. Building Constructor	1
	2. Brick layer	1
	3. Diploma holder in Civil Engg.	1
Above Rs.10.00 lakhs and up to Rs.50 lakhs	1. Building Constructor	1
	2. Brick layer	1
	3. B.E. (Civil) or equivalent Degree holder	1

Unless the contractor has been exempted from engagement of apprentices by the Director of Employment and Training / State Apprenticeship Adviser, a certificate to the effect that "The contractor had discharged his obligation under the said Act satisfactorily should be obtained from the Director of Employment and Training / State Apprenticeship Adviser and the same should be produced by the Contractor for final payment in the settlement of the contract".

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

**ADDITIONAL GENERAL CONDITIONS [(i.e.) ADDITION TO GENERAL CONDITION TO
CONTRACT APPENDED WITH TNBP]**

1. Postal Tender:

1.1 The contractors may have the option to present the tender directly or to send it by registered post, acknowledgement due, on or before the last date for receipt of tenders.

1.2 In case of sending tenders by registered post, acknowledgement due, it is the responsibility of the tenderer himself to despatch the tender sufficiently early, so as to reach the tender opening authority before the date and time notified in the tender notice for opening of tenders.

1.3 No representation appeal of any kind will be allowed against belated receipt of tenders by post beyond the notified date and time or loss in transit etc.,

2. Earnest Money Deposit:

2.1 The Earnest Money Deposit can also be paid in any form as approved by the State Government from time to time as per para 155 of TNPWD Code (ie) Demand Draft, Banker's Cheque, specified small savings instruments or where the procuring entity deems fit, in the prescribed form drawn in favour of **the Executive Engineer, W.R.D., Manjalar Basin Division** Demand draft payable at **Periyakulam**.

2.2 If offering Indira Vikas Patras, the contractor should note his name in the backside of Patras and to furnish a letter stating that he is submitting the Indira Vikas Patras indicating its registration number as E.M.D. to the officer accepting the tender. The purchase value of such Indira Vikas Patras will only be taken for calculation.

Particulars of E.M.D. Produced

Sl. No.	IVP/NSC/Other form number	Denomination (Purchase value) Rs.	No.of scrips	Total Amount Rs.
----- Particulars furnished vide P.No. 5 -----				

3. The tenderer should furnish the following details without any omission :

- 1 Consent letter from the Technical Assistant.
2. The residential/ Official address of the technical Personnel.
3. The qualification and the year in which the technical personnel passed the required examination (along with attested copy of certificate).
4. Attested copy of experience certificate of the technical personnel.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

APPENDIX II (a)**TENDER (For L.S.Contract)**
(As amended in G.O.Ms.No.618 PW/dt.30.4.85 and 660 PWD dt. 12.10.88)

Date:

To

His Excellency the Governor of Tamilnadu represented by the
Superintending Engineer, W.R.D., Periyar Vaigai Basin Circle, Madurai,

Sir,

I / We do hereby tender and if this tender be accepted, under take to execute the following work
viz.as shown in the drawings and describing in the specification deposited in the O/o the Superintending
Engineer, W.R.D., Periyar Vaigai Basin Circle, Madurai, with such variations by way of alterations or
additions to and omission from the said works and method of payment as are provided for in the
"conditions of contract" for the sum of Rupees

(Rupees

or such other sum as may be arrived at under the clause of the "General conditions to the contract"
relating to "Payment on lump sum basis or by final measurements at unit prices".2. I / We have also completed the priced list of items in schedule "A" annexed (in words and figures)
for which I / We agree to execute the work and receive payment on measured quantities as per the
General conditions to the contract.3. I / We do hereby distinctly and expressly declare and acknowledge that, before the submission of
my or our tender, I / We have carefully followed the instructions in the tender notice and have read the
Tamilnadu Building Practice and the General conditions to the contract therein and the Tamilnadu
Building Practice addenda volume, and that I / We have made such examination of the contract
documents and of the plans, specifications, quantities and of the locations, where the said work is to be
done and such investigation of the work required to be done, and in regard to the materials required to be
furnished as to enable me / as to thoroughly understand the intention of same and the requirement,
covenants, stipulations and restrictions contained in the contract and in the said plans and specifications,
and distinctly agree that I / We will not thereafter make any claim or demand upon the Govt. based upon
or arising out of any alleged misunderstanding or misconception of mistake on my / our part of the said
requirements, covenants, stipulations, restrictions and conditions.4. I / We enclose an income tax verification certificates
I / We being a registered P.W.D. contractorI / We have already produced an Income Tax verification certificate during current calendar year
in respect of (here particulars of the previous occasions on which the certificate was
produced should be given).

The legal address of the contractors for service of all letters and notices will be as follows:

5 (i) (a) I/we enclose herewith the patras for the payment of the sum of
Rs.....earnest money.**Contractor****Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

5(I)(C) In lieu of cash deposits, I/we.....have enclosed abearing No.....date.....issued by.....for a value of Rs.....(Rupees.....only)drawn endorsed/ pledged in favour of the Executive Engineer.....Division.

5(i)(d) Iam /we are.....and hence exempted from payment of E.M.D.

6. If my / our tender is not accepted, this sum shall be returned to me / us on my / our applications when intimation is sent to me / us of rejection or at the expiration of two months from the date of this tender whichever is earlier. If tender is accepted, the Earnest money shall be retained by the Govt. as security for the due fulfilment of contract. If upon intimations being given to me / us by the authority authorised by the Governor under article 299 (1) of the constitution (hereinafter called the "accepting authority") of acceptance of tender, (I / We) fail to make the additional security deposit, then I / We agree to the forfeiture of earnest money deposit. Any notice required to be served on me / us hereunder shall be sufficiently service on me / us if delivered to me / us personally or forwarded to me / us by post to (Registered or ordinary) or left at my / our address given herein. Such notice shall, if sent by post be deemed to have been served on me / us at the time when in due course of post it would be delivered at the address to which it is sent.

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

8. I / We have also signed the copy of Tamilnadu building practice and National Building code and addenda volume there to, maintained in the **Manjalar Basin Division, Periyakulam** office, in acknowledgement of being bound by all conditions of the clauses of the General conditions to the contract and all specifications for items of works described by a specification number in schedule 'A'.

9. In consideration of the payment of Rs. (Rupees or such of the sum as may be arrived at under the clause of the General condition to the contract, relating to payment on lump sum basis or by final measurement at unit prices. I / We agree subject to said conditions to execute and complete the works shown upon the said drawing serially from Number 1 to 12 inclusive (schedule - B) and described in the specifications (schedule - C) and to the extent of probable quantities shown in (schedule - "A") with such variations by way of additions to or alterations or deductions from, the said work and method of payment therefore as are provided for in the said conditions.

10. i) The term "Executive Engineer" in the said condition shall mean the Public Works Department officer incharge of the Divisions having Jurisdiction for the time being over the work, who shall be competent to exercise all the powers and privileges reserved herein in favour of the Govt. with the previous sanction of or subject to ratification by the competent authorities in case where such sanction of ratification may be necessary and who has been duly authorised under articles 299 (1) of the constitution.

ii) In the event of the work being transferred to any other Circle / Division, Sub Division, the Superintending Engineer / Executive Engineer / Assistant Executive Engineer who is incharge of Circle / Division / sub Division having jurisdiction over the work shall be competent to exercise all the powers and privileges reserved in favour of Govt.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

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

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

I / We in pursuance of clause 18 of tenderer notice undertake to employ the following technical staff for supervising the work and will see that one of them is always at site during working hours personally checking all items of works and paying extra attention to such works as may require special attention (e.g.) reinforced cement concrete.

Sl.No. 1	Name of technical staff proposed to be employed 2	Qualifications 3	Experience 4

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

i) The Superintending Engineer, WRO / PWD, Lower Vaigai Basin Circle, Sivaganga in case, the value of claim does not exceed Rs..50,000/- (Rupee fifty thousand only) and (ii) I agree that in case, the value of claim is Rs. 50,001/- and above the remedy will be through the competent civil court only.

Signature of Contractor.
with date

Acceptance order

On behalf of the Governor of Tamilnadu and as duly authorised by the Governor under Article 299 (1) of the constitution the above tender for a value of Rs.....
(Rupees.....only) is accepted on this
day.....of.....after negotiation.

Signature and Designation

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

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

ARTICLES OF AGREEMENT

ARTICLE OF AGREEMENT made thisday.....2018
between the Executive Engineer/Superintending Engineer on behalf of Governor of Tamil Nadu (here in
after called the Governor which expression shall where the context so admits include his successors in-
office and assigns) of the one part and *
of **

(hereinafter called the Contractor which expression shall where the context so admits include his
heirs, executors administration and legal representatives) of the other part.

WHEREAS the Government of Tamil Nadu (Hereinafter called the Government) are
desirous of ***
and have caused an estimate of probable quantities contained in schedule A, drawings and
specifications describing the work to be done to be prepared.

AND WHEREAS the contractor has agreed to the retention by the Government of the
earnest money of Rupees.
paid by him when he submitted his tender as security for the due fulfilment of the contract to the
satisfaction of the Executive Engineer, Division (hereinafter referred to as “ the Executive
engineer”)

And whereas the Contractor has deposited with the Executive Engineer, the sum of (
Rupees.....) in the shape of
.....as additional security for the due fulfilment of the contract to the
satisfaction of the Executive Engineer.

And whereas the contractor has agreed to executive upon and subject to the conditions set forth in the
General conditions of the contract of the Tamil Nadu Building Practice such other conditions as are
contained in all the specifications forming part of this contract (here in after referred to as ; the said
conditions”) the works shown upon the drawings and described in the said specifications and set for the in
Schedule A as the “ Probable quantities” and comply with rate of progress noted at the end of this Articles
of Agreement for a sum of Rupees”

or such other sum as may be arrived at under the clause of the General Conditions of
the contract relating to “ Payment on lump-sum basis or by final measurement at unit prices”

In witness whereof the Contractor *

has here unto set his hand and ****Executive Engineer/ Superintending Engineer
of circle Division at.....on behalf of any by the order and direction of His Excellency the
Governor of Tamil Nadu has hereunto set his hand the day and year first above written.

Signed by Contractor.

Address.

In the presence of Witness

signed by on behalf of Government
designation –

In the presence of witness.

* Contractor's Name

** Contractor's legal address for registered letters and notices.

*** Name of work and locality.

****Name of the officer.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

ANNEXURE TO TENDER NOTICE
SCHEDULE - A
SCHEDULE OF RATES AND APPROXIMATE QUANTITIES

A) The quantities here given are those upon which the lump sum tender cost of the work is based but they are subject to alterations, omission, deductions or additions as provided for in the conditions of this contract and do not necessarily show the actual quantities of work to be done. The unit rates noted below are these governing payment of extras or deductions for omissions according to the conditions of the contract as set forth in the General conditions to the contract of the Tamilnadu Building practice and other conditions or specifications of this contract.

B) It is to be expressly understood that the measured work is to be taken net (Not with standing any custom or practice to the contrary) according to the actual quantities when in place and finished according to the drawings or as may be ordered from time to time by the Executive Engineer and the cost calculated by measurement or weight at the respective prices, without any additional charge for any necessary and contingent works connected therewith. The rates quoted are for works in situ and complete in every respect.

Item No.	Probable quantities Fig/words	Description of work	T.N.B.P.No	Unit both in words and figures	Rate in Words & Figures Rs. P.	Amount in figures Rs. P.
-- Attached Separately -						

SCHEDULE - B

LIST OF DRAWINGS

SUPPLEMENTAL LIST

Note: All drawings to be signed by the contractors as well as the officer entering into the contract.

As referred to in the specification including the general conditions to the contract of Tamilnadu Building Practice.

Sl. No.	Drawing No. Description	Sl. No.	Drawing No. Description
1.	Index Map - 1 No.	5.	Cross section Front Head wall & Guide wall and Rear Head wall – 1 No.
2.	Cross section of Flood Protection wall – 1 No.	6.	Details of Field Channel lining – 1 No.
3.	Half Plan @ Bottom and Half Plan @ Top construction of culvert – 1 No.		
4.	Plan Repairs to Sluice - 1 No.		

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

SCHEDULE – C

List of specifications for the various items of work supplementing those described in Schedule A by standard specification numbers.

1. The Contractor shall employ the following Technical Staff for Supervising the work and shall see that one of them is always at site, during working hours, personally checking all items of work and paying extra attention to such works as may demand special attentions (e.g) reinforced concrete works etc.,

Sl. No. 1.	Name of the Members of the Technical Staff to be employed with full address 2.	Qualifications 3.

Note : In Case the Contractor himself is professionally qualified the above specification should be suitably altered and in case in which the Contractor selected has not given an undertaking to employ men it should be scored out.

Note : Additional specifications, if any, which have to be entered in Schedule C should be entered below item (1) above and numbered continuously.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Special Condition for GST

**The tenderer should furnish the “copy of Goods and Services Tax (GST) Registration Number.
GST RATES AT 12% FOR WORKS CONTRACT**

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

And the GST amount will be calculated at 12% from the sum of total tendered value quoted by the tenderer for construction cost/ electrical works cost (excluding GST) specified in the Bill of Quantities, subject to GST rate applicable from time to time as recommended by the GST Council.

INPUT TAX CREDIT (ITC)

2. (a) As per Notification 202, dated: 29.06.2017 and as per sub-section (2) of section 7 of the Tamil Nadu Goods and Services Act 2017, (Tamil Nadu Act 19 of 2017) activities or transactions undertaken by State Government shall be treated neither as supply of goods nor a supply of service.
(b) As per Chapter IX (Section 41) of the Tamil Nadu Goods and Services Act 2017, every registered persons may be entitled to take the credit of eligible input tax, as self-assessed, in his return and such amount shall be credited on a provisional basis to his electronic credit register.
(c) As per Revised Schedule of Rates for 2017- 2018 dated: 21.10.2017, under General Not 8 (ix), the contractor is eligible to get refund of excess tax paid or liable to pay tax for this Contract Work.

TOTAL TENDER PRICE

3. The total tender price will be the cumulative of value quoted for construction/ providing (Total Basic Price + GST).

NEGOTIATIONS:

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

5. AWARD OF CONTRACT

*The contract will be awarded to the lowest bidder, whose bid substantially responsive to the bidding documents and who has offered the lowest evaluated total tender price **(Total Quoted Value including the Goods and Services Tax (GST) Amount)**”*

6. PAYMENT

Part or complete Payment will be made only on satisfactory completion of work in full / part thereof and value of work executed shall be determined, based on the measurements and check measurements by the Engineer in the Measurement Book.

For every Bill, 12% of GST will be paid to the contractor based on the value of work done for Construction by the Employer. After the payment including 12% of GST, the Contractor should pay the GST Amount to Government through his GST Registration No. Also the contractor needs to submit the Material purchase bill mentioning the name of the work/s in the package and GST No. to the Employer.

b) First Bill Payment:

“At the time of payment for first running account bill, the contractor should **produce** the GST paid details on goods (Materials) to the Employer for ITC.”

c) Intermediate Bill Payment:

“At the time of payment for next running account bills, the contractor should produce the GST paid details of services upto previous bill payment (i.e. GST paid detail for the previous work bill) along with Input Tax Credit (ITC) availed at the time of payment of intermediate bill to the employer.”

d) Final Bill Payment:

“The contractor should produce the GST paid details for all the materials used for construction work and GST paid details of services for the upto previous payment (i.e. GST paid detail for the upto previous work bill) to the Employer along with Input Tax Credit (ITC) availed at the time of payment of final bill to the employer.”

e) Submission of GST paid details of Final Bill

“The GST paid details for the final work bill payment of construction work to be submitted by the contractor to the employer in few days after getting payment”,

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Special conditions
(ie., in addition to General Conditions to Contract appended with TNBP)

1. Claims of Contractors on account of losses due to unprecedented floods and other acts of God.

The Work in PWD (Building and irrigation) executed by the contractor under the contract shall be maintained at the contractor's risk until the work is takeover by the Executive Engineer. The contractors shall accordingly arrange his own insurance against fire, flood, volcanic eruption, earth quake other convulsions of nature and all other natural calamities, risk arising out of acts of god, during such period and that the Government shall not be liable for any loss or damages occasioned by or arising out of any such acts of god.

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

2. Standard Specifications:

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

3. Safety Code

The safety measures and all amenities for the labours shall be made by the contractor at his cost as indicated on the safety code vide appendix to General Conditions to Contract and clause, 34, 35 and 42-1 to 42-6 of General Conditions to Contract.

4. a) The Contractor shall provide safety measures for the prevention of Children being trapped and falling in to bore wells, tube wells and abandoned wells in the site.

5. Recovery of dues under Revenue Recovery Act.

When ever any amount has to be paid by the contractor in view of determinations of the contractor by virtue of clause 57(4) or any amount that may be due or become due from the contractor under these presents and the contractor is not responding to the demands for the payment of the said amount then the Government shall be entitled to recover the said amount under the provision of the Revenue Recovery Act.

6. Reinforced Cement Contract Works:

6.1 Centering

Payment for centering works for all R.C.C items shall be made only after concrete is laid, even though separate rate is called for, for centering work in the schedule.

6.2 Concrete for R.C.C Works:

All cement concrete for R.C.C. Works shall be machine mixed and vibrated.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

7. Employment of technical assistant:

a) For more than one work:

One technical assistant be employed by the contractor for more than one work situated within one kilometer, provided that monetary limit prescribed for the nature of technical staff to be employed is adhered to by one and the same contractor.

b) Movement register:

A movement register may be maintained for technical assistant employed by the contractor, if the contractor has agreed to such employment or for the technically qualified contractor. The technical assistant or technically qualified contractor may note their arrival and departure timings everyday in that register along with initials. Such register should be produced during inspection.

c) Other engineering qualification:

The contractors who possess a degree in mechanical or chemical engineering may also have to appoint technical assistants as in the case of registered contractors with degree in electrical engineering, when they are entrusted with civil works by the department.

8. Ban on Employment of child labour:

The contractor shall not employ the labour below the age of 12 years and shall note that he must offer employment to Ex-Servicemen, Ex-toddy tappers, unemployed agricultural labourers, and Burma, Malaya and Ceylon repatriates as far as possible.

9. Hold fasts:

Iron hold fasts shall be fixed in the walls at the time of construction with cement concrete 1:3:6 using 20 mm gauge broken granite stone jelly for proper anchorage and binding. No separate rate for such pockets of concrete filling at hold fasts points will be allowed, and this will be measured as masonry along with adjacent masonry.

10. Wood:

Teak wood shall be best Indian teak Wood only and shall be subject to inspection and approved by the Executive Engineer before use on the work. Country-wood where specified shall be Karumarudhu, Pillaimarudhu, Kongu, Ventek for scantling and Manjai Kadambu, Iyini for planks, as may be specified and approved by the Executive Engineer.

11. Beams:

In the case of Tee Beams all EII Beams, the quantity given in the schedule is the quantity of rib portion only.

12. Plastering Corners:

All corners shall be finished sharp using C.M. 1:3 not exceeding 7.50 cm width on each side of the corner. So also the edges of beams, edges of doors and window openings, soffits, shall be finished sharp using rich mortar and finished truly vertical or horizontal as the case may be. The unit rate quoted by the contractor for plastering shall include the cost of finishing as above and no separate claim for extra rate will be entertained. However, the cement utilized for the work will be taken into consideration in the adequacy statements for issue of department cement to the contractor.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

12: Works in different floors:

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

14. Employment of qualified Plumber:

The contractor should employ qualified plumber in the execution of sanitary and water supply works.

15. Earth work for Irrigation Work:

15.1 Each and every borrow pit will be individually marked either by the section officers or by the Sub Division Officers and in urgent case, by the work inspectors incharge of the work, subject to the approval of the Section Officer. Earth should be removed only from the places marked and to the depth ordered by the above officers.

15.2 The contractor should not put borrow pits for removal of earth in a haphazard fashion and they should only be put in the place and in such a manner, as may be directed by the officers in charge of the work. If any such unauthorized pits are put in the contractor will have to fill up the pits at his own cost.

15.3 A deduction of 20% and 10% will be made in the quantity of earth work measured for thandus and muttus respectively and the amount on account of this deduction will be paid after satisfactory removal of thandus and muttus. If thandus and muttus are not removed within a month from the date of check measurement by the Sub Divisional Officer or the Executive Engineer or within the period fixed at the discretion of the Executive Engineer, the 20% and 10% deduction be final and will not be revoked.

15.4 The Contractors shall arrange for sectioning of the bank immediately after the work on reach is completed. The final sectioning must be completed within 15 days, after the completion of the work in the entire reach.

15.5 While comparing the quantities for measurement in borrow area and formed, where special consolidation is done using mechanical roller or hand or power roller an increase of 15% (Fifteen percent) of the finished quantity may be added and the final quantity arrived at as indicated below.

1) The quantity as per borrow pit measurement.

2) The quantity of earth work as per levels (i.e) after consolidation with 15% allowance for consolidation.

The lesser of the above two shall be taken as final quantity of earth work done for the purpose payment.

16) Forming of bunds and Embankments:

16.1. Payment for earth work for forming bund and embankment, will be made excluding the quantity of pebbles, boulders and other such materials which shall not be used along with the earth work the formation of bund.

16.2. Department machinery if possible will be supplied to the Contractor and the hire charge will be recovered at the rates which will be fixed then and there.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

17.Hard rock requiring blasting:

17.1 In the case of earthwork excavation in hard rock requiring blasting, the tender should observe the following conditions:

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

b) Where the rock other than hard rock and are mixed up on 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 applying 40 % deductions for voids. The total of the net measurement of two kinds of rock shall be compared with the premeasured quantity and only the lesser of the two shall be paid for. If the total of net measurements of the two kinds of rock exceeds (or) falls short of the measurement of mixture, the volume of mixture proposed to be paid shall be apportioned in the proportion of the net actual measurement of stacks of the two kinds of rocks.

NOTE:

i) 40 % deduction for voids shall be adopted for compact and proper stacking but such percentage shall be increased loose (or) improper stacks.

ii) The blasted rock material, stacked, measured and paid for shall become the property of the department.

iii) I.S. Code No 1200(Part, I)1969 method of measurement of building and Civil Engineering work, Part, I Earth Work' any be referred as and when necessary.

18)Deduction of Tax at Source from payments to contractors(SEC 194C).

18.1 Consideration in excess of Rs.20,000 /- Tax deduction:

18.2 No tax is to be deducted at source in respect of a Contract the consideration for which does not exceed Rs.20,000. Where payments are made under several contracts during a financial year and the consideration for any individual contract does not exceed Rs.20,000 ,no deduction is required to be made under this section though the total payment exceed Rs.20,000/-

18.3 Rate of tax deduction- during the current financial year in respect of payments to Contractors/Sub-Contractors

Payment to a Contractor (being a Company)	2%
Payment to a Contractor (being a person other than a company)	2%

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

ADDITIONAL SPECIAL CONDITION

- 1) The contractor should not enter any private land for removal of earth there from, without the prior written consent of the land owner. If he does so unauthorized, the contractor will be held fully responsible for any consequences arises there from.
- 2) If night work is required to fulfill the agreed rates of progress all arrangements shall be made by the contractor including lightning without any claim for extra rate.
- 3) Payment will be made on detailed measurements. Any of the item in the schedule may be omitted or altered radically no variation in the rate shall become payable to the contractor on account of such omission or variation in quantities.
- 4) The shed for storing materials should be put up by the contractor at his own cost.
- 5) The Executive Engineer will be entitled to carryout any portion of the work at any time either departmentally or through any other agency in the interest of Government work without assigning any reasons to the contractor who is actually doing the work. The contractor is not on titled for any compensation on account of the same. The contract will be only subject to this condition.
- 6) Tenderers with in tampered seales will not be accepted
- 7) Sufficient labourers as may be required by the Executive Engineer, shall be employed on the work so as to increase the progress of work.
- 8) Mango plank shall not be used for centering of R.C.C works under any circumstances, Centering and forms shall be provided to the extend and area ordered by the Executive Engineer during the execution. If wodden centering is used the junction of two planks shall be provided with G.I sheets of approved the thickness and width.
- 9) The RTS / mild steel sections such as rods etc., Used on the work shall be measured based on the standard section weights and dimensions per unit, length as per the latest revision of the I.S.I. had book for structural Engineers.
- 10) Casurina posts shall be used for strutting for plain surfaces of all R.C.C works.
- 11) No additional work shall be executed without prior approval of the competent authority.
- 12) The Contractor shall prepare a pert chart for works costing more than Rs.5.00Lakhs and produce the same before starting the work.
- 13) Earth work and masonry work should be started simultaneously if so required by the Department Officers.
- 14)The rates specified in the schedule for the different items of work are for the finished work only.
- 15) The revetment should be built up to an uniform depth as directed by the Department Officers. Each stone should run to the full depth of the revetment.
- 16) Departmental machineries if possible will be supplied to the contractor and the hire charges will be recovered at the rates which will be fixed then and there for the machines from the contractor.

Contractor**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

17) CEMENT AND STEEL

The contractor shall make his own arrangements for the procurement of cement and steel in open market to required specification and required quantity for the works.

The contractor shall make his own arrangements to test the steel and Cement as to whether they conform to I.S. Specification and produce test certificate to the P.W.D field Engineers. The test may be conducted at his own cost in the Government Laboratory (or) Laboratory approved by the Government.

The quantity of materials supplied by the contractor to the works will be conformed by periodical test by the Department in the Government Laboratory (or) Laboratory approved by the Government.

18) CEMENT:

A) General: Cement shall conform to clause 4 of I.S 456-1978 for the purpose of specification. Cement used shall be any of the following with the prior approval of the Department Engineer.

The provisions of this paragraph apply to Cement for use in concrete required under these specifications. Portland cement required for items such as concrete pipes, precast concrete structural members and other precast concrete products for grout and mortar and for other items is provided for in the applicable paragraph of these specifications covering the items for which such Portland Cement is required.

b) Acceptance of Cement: Tested cement will be supplied by the contractor according to Clauses 10.1 of I.S. 269-1976.

19) REINFORCEMENT

a) General: The contractor shall furnish, cut, bend and place steel reinforcement including rods or mild steel and for steel as indicated in drawings as directed by the Department Engineer.

All steel used for reinforcement shall be clean free from oil, grease, paints, dust, mortar, scales, kinks, rust or any rolling defects or directions of the Department Engineer. Mild steel, high tensile steel bars and hard drawn steel wire conforming to I.S. 432-1960 as revised from time to time.

i) Structural steel sections conforming to IS 226-1955 as revised from time to time.

ii) Cold twisted steel bars complying with the requirements of I.S. 1786-1966 as amended from time to time.

Binding wire used shall be of soft annealed steel of 16 S.W.C. and shall have an ultimate strength of not less than 5600 kg. per square cm. and a yield point of not less than 3850 kg. per square cm.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

CEMENT AND STEEL SPECIAL CONDITION

- 1) **Cement** : The contractor has to make his own arrangements for the procurement of cement of required specifications for the works subject to the followings.
 - A) The Contractor shall procure cement required for the works only from reputed cement factories (main producer of their authorized agents manufacturing cement to ISI standard) acceptable to the Engineer – in – Charge. The contractor shall be required to furnish to the Engineer-in-Charge bills of payment and cost certificates issued by the manufacturers or their authorized agents to authenticate procurement or quality cement from the approved cement factory.
 - B) The Contractor shall procure in standard packing of 50 Kg. Per bag bearing manufacturers name and ISI marking from the authorized manufacturers. The contractor shall make necessary arrangement at his own cost to the satisfaction of Engineer – in – Charge for actual weightment of random sample from the available stock and shall conform with the specification laid down by the Indian standards Institutions as the case may be. Cement shall be got tested for all the tests including trough destructive and non-destructive test materials etc. as directed by the Engineer – in – Charge in advance before the use of cement bags. In case test results indicate that the cement arranged by the contractor does not conform to the relevant code, the same shall stand rejected and shall be removed from the site by the contractor at his own cost within a days time of written order from the Engineer – in – Charge to do so.
 - C) The employer will furnish air recraing agents and admixtures required to the contractor fee of cost at the employer stores. The use of such admixtures and agents shall be made as per the instructions of the Engineer – in – Charge. The cost of cartage / storage, handling, batching mixing shall be borne by the contractor and shall be included by him to unit officers tendered for concrete.
 - D) The Cement shall be brought at site in bulk of approximately 50 tonnes or as decided by the Engineer – in – Charge for large works.
 - E) The Cement Godown of the capacity to store a minimum of 1000 bags of cement shall be constructed by the contractor at site of work, for which no extra payment shall be made. The contractor shall facilitate inspection of the cement godown by the Engineer– in – Charge at any time.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

- F) The contractor shall further at all times satisfy the Engineer – in – Charge on demand production of records and test book or by submission of returns and other proofs as directed that the cement is being used as tested and approved by the Engineer – in – Charge for the purpose and the contractor shall at all times, keeps his record upto date and enable the Engineer – in – Charge to apply such checks as he may desire.
- G) Cement which has been unduly long in storage with the contractor or alternatively has deteriorated due to inadequate storage and thus become unfit for use on the works will be rejected by the Department and no claim will be entertained. The contractor shall forth with remove from the work area any cement the Engineer – in – Charge may disallow for use of work and replace it by cement complying with the relevant Indian standards.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

CEMENT AND STEEL

6.1 Cement shall confirm to clause 4 of IS 458 – 1978 for the purposes of specification. Cement used shall be any of the following with the prior approval of the Engineer.

1. Ordinary of low heat Portland cement confirming to IS 269 – 1976 (IS specification ordinary and low heat Portland cement. Third revision)
2. Portland Pozzolana cement confirming to IS 1489-1976.

6.2. The Contractor shall make his own arrangement for the procurement of cement to required specification required for the works. Transportation from the place of manufacture to the site shall be in weather right equipment, trucks, conveyers and other means, which will protect the cement completely from exposure to moisture. Immediately upon receipt at the job site, bulk cement / bagged cement shall be stored in dry weather tight properly ventilated store sheds. The store sheds shall be emptied and cleared by the contractor when so directed by the Engineer. However, the intervals between required cleaning will normally be not less than 6 months. Each shipment and shall be stored separately on that it may readily be distinguished from other shipment and shall be stored separately so that it may readily be distinguished from other shipment and shall be stored in a dry enclosed area protected from moisture storage of materials shall be as described in IS 4082 – 1977 to prevent undue agency at bagged cement after delivery. The contractor shall use bags of cement in the chronological order in which they were delivered to the job site. All storage facilities shall be subject to approval of the Engineer and shall be constructed to provide easy access for inspection and identification.

6.3 Acceptance of Cement:

Tested cement will be supplied by the Contractor according to clause 10.1 of I.S.269-1976.

6.4. STEEL.

The contractor shall make his own arrangement for procurement of steel of required specifications.

The reinforcement steel bars brought to site should confirm to ISS 432 (Part I) 1966 (Plain rods Grade I) and ISS 1786/1966 (C.I.D.Bars) and its latest amendments. Each bundle containing the bars shall be suitably marked with the ISI Certifications mark and the concerned test certificate shall also bear the ISI Certification mark.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

CONDITIONS FOR MASONRY

1. The rough stone and face stone hammer dressed and chisel dressed, required for the work shall be collected by the Contractor from the local quarries shown by the department officers.

2. The face stone, the hammer dressed to the supplied by the contractor shall be as per MDSS. For three line dressing of spillway surface, the stones shall be so dressed that the Variation between the cleared and depressed points on the surface when judged from straight edge held against in shall not be more than 0.15cm.

3. Cleaning masonry surface for laying fresh masonry will have to be done by the Contractor, as per relevant specifications of TNDSS. Sand blasting if required will be done by the Contractor.

If masonry work has been stopped by the department for more than two weeks for any reasons and the Executive Engineer consider if necessary to chip the mortar joints and make them for $\frac{3}{4}$ " depth before laying fresh masonry it will be paid for separately at the rates for relevant items in the schedule, and when there are no rates in the schedule supplemental rates will be worked out. However, payments will not be made for this items, if the work has been stopped by the Contractor for any reason has stopped the work. The decision of the Executive Engineer will be final and binding in this regard.

If the masonry surface gets meared with waste, oil, grease etc., by the working or drills or due to other cause such please shall be cleaned and chipped if necessary by the contractor at his cost.

The random rubble masonry work and coursed rubble masonry work with hammer dressed or chisel dressed stones for the face work shall be homogeneous construction and hence face masonry shall be properly keyed into the hearing masonry. The face work shall consist of headers and stretchers laid at right angles to the face better.

For random rubble masonry for hearing the stones are to be set in the work in their flat beds as received from the quarry after knocking out weak corners and edges with the masons hammers. All stone chips, spalls etc. shall be washed clean with water before use so as to ensure a clear surface for that mortar to adhere to and shall be sprinkled with water before actually placing in the work to prevent absorption of water from the mortar. The stones shall be carefully laid so as to break joints, as much as possible and solidly bedded with closed joints, Random rubble masonry shall be laid on fresh cleaned surface, after wire brushing, flushing with water under pressure and removing all mortar, washing etc., the mortar shall be worked by a trowel to a shaly mass and the selected stone laid on this bed and shaken to sink into it squeezing it out at the sides.

The stones should then be hammered down by a mallet or hammer of 12 to 16 lbs weight and dressed towards the adjustment stones at the time without touching them. Additional mortar should then be added to fill the intervening spaces and well worked by trowel and a light hand bar $\frac{1}{2}$ " diameter 2 feet long to mix up well with bottom mortar and the stone / vibrated to the extent necessary to bring up all excess mortar and any trapped air in the mortar. When the mortar is in the stage of quaking mass, the biggest suitable spall shall be driven into the intervening space by a hand hammer 4 to 6 lbs thus consolidating the mortar and squeezing out all excess for the nearby again, thus preventing thick beds of mortar. This should not be put in before filling the joints with mortar.

The masonry surface should be kept as rough as possible, to secure good bond between successive layers.

Before commencing masonry over the masonry laid, the previous day the surface should be wire brushing so as to remove all laitance excess mortar etc.

The quantity of mortar to be used in mass masonry in the construction shall not ordinarily exceed 38% for RR masonry and 32 % for C.R. Masonry. Except in mass masonry construction the quantity of mortar to be used in the construction shall not ordinary exceed 34% for R.R. Masonry.

Necessary "L" bolts will be supplied by the department free of cost. But fixing of the "L" bolts and twisted clamps will have to be done by the contractor and the rates for masonry shall include the fixing of the bolts and twisted clamps.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

CONDITION FOR CONCRETE :

All concrete works should be done in accordance with I.S. code 456. The quantity of materials, course aggregates, fine aggregate water etc. should be conform to said code.

SPECIAL CONDITION

1. This is a LS Contract.

2. The work should be completed within the contract period keeping the specified rate of progress. Claim for extension of time of reasonable grounds will be entertained. But there should be no claim for extra rate in any manner.

2.a. After tender is accepted and intimated to the tenderer, if the contractor fails to carry out the contract after paying the required deposits, then he will be liable for the excess expenditure if any incurred to complete the work through the other contractor as contemplated in the General condition to the contract.

3. In the case the contract is terminated for default on the part of the contractor, the EMD, SD and the withheld amount will be forfeited to Government. Further the balance work left out will be completed by the other agency and the extra cost will be recovered from the Contractor through any means even imposing Revenue Recovery Act in force. The officer terminating the agreement shall have the option to take over any of all the materials and other equipment at site at a value assessed by him, If the contractor does not agree to this he shall clear the site by removing at his cost all such materials, equipment's etc. within 10 days of the termination of the agreement failing which, the Government may remove the same holding the proceeds less the cost of removal and sale to the credit of the contractor.

4. The quantities of each item of work furnished in the schedule are only approximate.

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

GENERAL CONDITION

1. Tenders with tampered seal will not be accepted.
2. Tenders in which rates are not written in words will summarily be rejected. In case of any discrepancy while expressing rates in words, the rates whichever is advantageous to Government will be taken into account.
3. Over writing or corrections should invariably be attested by the tender.
4. The tenderer shall fill in the schedule the amount for each item also.
5. The rates specified in the schedule for the different items of works for the finished works only.
6. The contract rates are inclusive sales tax payable by the Contractor to the Government as per Tamil Nadu Sales Tax Act in force or amended form time to time. There shall be no claim on this account.

GENERAL CONDITION

1. Permits required under minerals and mines act or any other relevant act for carrying materials will be obtained by the department. If materials quarried under such permit are found to be diverted to works other than works mentioned in the agreement, the contractor is liable to pay all penalties under Acts and seigniorage charge. The contractor is bound to act according to any amendment to mines and minerals acts. If necessary he has to make his own arrangements to obtain permits to quarry any construction materials from the authorities concerned.
2. In centering work, where the concreting materials are supplied by the department, the retrieved materials should be taken back by the contractor, payment for centering work will be made only after concreting work is completed.
3. Payment will be made on detailed measurements. Any of the items in the schedule may be omitted or altered radically. Variation in rate shall become payable to the contractor on account of such omission or variation in quantities.
4. No borrow pit should be less than 0.5m in depth. A gap of one metre should be allowed between any two consecutive pits. The length and depth of the pits should be decided to suit the requirement of earth work for the bank formation in the reach opposite to the respective pits, are excavated for more than 3.00 m in width diagonal does should be provided.
5. The Contractor should not enter any private land for removal of earth where from without the prior written consent of the landowner. If he does so unauthorisedly the contractor will be held fully responsible for the consequences claiming therefore.
6. The revetment should be build upto an uniform depth as directed by the departmental officers. Each stone should be to the full depth of revetment.
7. In case of earthwork excavation and formation of embankment payment will be made for the finished quantity of the compacted completed embankment plus 15% for compaction or the borrow area quantity whichever is less.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

8. The contractor should satisfy himself about the availability of various materials at the specified quarry the tender schedule and their lead to work site before tendering for the work. In case the contractor chooses to procure the materials from the quarries other than the stipulated quarries and quotes his rates he should make mention of the fact with details of quarries from which he proposed to bring the required materials in the covering letter to accompany his tender for the work enabling the Department to examine the suitability of the materials. Any claim for the payment of extra cost on account of increase in lead of materials will not be entertained for any reason. Any tender with such extra claim will only be conditional tender and it will be rejected for this reason. Change of quarry is not generally permissible as the quarries for each project work is got approved by the collector of the District under mines and minerals Act for bonofide use of materials on Government works.
9. Clean river sand shall be used in all cases.
10. Only clean fresh water shall be used on the work. The contractor shall make his own arrangements for water and meet all charges therefore. The special attention of the contractor is drawn to clause 39 of Preliminary specifications of the TNDSS regarding water and lighting.
11. The broken stone for concrete and RCC works should be of granite and passed by the Executive Engineer.
12. The arrangement of M.S. rods for all RCC works shall be in accordance with the working drawing supplied.
 - i. Payment for centering works for all RCC items shall be made only after the concrete is laid even though separate items for centering works are including in the schedule.
 - ii. All the cement concrete for RC works shall be machine mixed and vibrated.
 - iii. All lime mortar shall be ground in mortar well as per TNDSS.
13. MS steel rods should be cut and placed as reinforcement with proper care according to the available rods at site, so as to ensure the minimum possible wastage.
14. The contractor 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 Executive Engineer.
15. No royalty shall be charged where due for materials quarried from the Public Works Department or District Board or other Government quarries, Necessary assistance will be given to the contractor by the PWD to obtain access to quarries approved by the Executive Engineer. No plot rent shall be charged on materials stacked on the Government land during the course of construction provided all such materials are removed within a month after the work is completed.
16. Royalty or charges due for use of private quarries and private land shall be paid by the contractor.
17. The Contractor's special attention is invited to clause 37 and 38 of the preliminary specification of TNDSS and he is requested to provide at his own expenses, shed latrine and Urinal for his workmen.
18. If night work is required to fulfil the agreed rate of progress all arrangements shall be made by the Contractors inclusive of lighting without any claim for extra.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

19. The contractor shall not employ the labour below the age of 12 years and shall also note that the must offer employment to ex-servicemen. Ex-today tappers and unemployed agricultural labourers as far as possible.
20. The contractor shall abide the contractor's labour regulation of the PW framed by the Tamilnadu Government.
21. The contractor shall use steel centering (C) steel sheets over wooden frame so as to obtain the required finish to the under side of the slab. The centering steel as sheets must made smooth and perfectly level at top so as to give smooth and even finish to the RC ceiling centering and form works shall be provided to extent and area ordered by the Executive Engineer during execution.

22. Price Adjustment Clause :-

(1) Price Adjustment

(a) Contracts of more than 12 months

Full price adjustment on all the components including cement, steel, bitumen and Petroleum, Oil and Lubricants (POL) shall be applicable to the works with contract period of more than 12 months instead of the present system of 18 months.

(b) Contracts of 12 months and below.

In respect of contracts of 12 months and below, price adjustment shall be applicable in respect of cement, steel, bitumen and petroleum, Oil and lubricants (POL) only.

- (i) Price adjustment clause will be applicable for all works where value of work put to tender costing Rs.100 lakhs and above. However, No Price Adjustment will be applicable for Maintenance and Repair works.
- (ii) Price adjustment will apply only when the rates exceed or decrease by 3% or more as compared to the estimate rates (RBI Index Price).
- (iii) The price adjustment shall be calculated only on the departmental estimated cost of the work.
- (iv) In respect of bitumen and POL, it may be considered on 'pass through' basis with payment of actual rates/price at the rates charged by Indian Oil Corporation.
- (v) All works for which price escalation/variation is contemplated must have milestones fixed in physical terms and have a prefixed 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 mile stones. Price variation/escalation 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 the third quarter which ought have been done in earlier quarter, price variation/escalation will still be applicable on that quantity at the rates applicable in the relevant quarter as per time-line or period of actual use whichever is less.
- (vi) Liquidated damages will be imposed on the contractor for the lapses/shortfall in achieving the rate of progress as per existing schedule.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

- (vii) The price adjustment mechanism will cease to operate for value of work executed beyond the agreement period. But 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.
- (C) Price variation will be calculated once in a quarter (I) in respect of cement and steel for the works with contract period upto 12 months and (II) in respect of all components except bitumen and Petroleum, Oil & Lubricants (POL), for the works with contract period of more than 12 months, as per the specified formula from the last date of submission of bid upto the end of agreement period provided, if the agreement is signed within the minimum specified time, falling which, the price variation will be applicable from the date of agreement only, based on the wholesale price Indexes of RBI. The quarter would be reckoned with reference to the quarter of the calendar year in which the last date on bid 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.
- (d) In order to avoid Revised Administrative sanction proposals, provision for escalation can be included in the original estimate itself at the rate of 5% of cost of works for every one year of the duration of the contract.
- (e) Price variation will be operated by the respective Divisional Engineers/Executive Engineers.
- (f) Tender excess shall not be allowed on the tendered value of the work towards the probable increase in costs due to factors covered under para 3(1) (a), 3 (1) (b) and 3(1) (c). In such cases, if a cost increase is foreseen due to factors not covered under the above clauses, tender excess may be considered and provided based on justification of such factors and this power shall vest only with the State Level Tender Award Committee/Commissionerate of Tenders.”

23. Bonus for advance completion of work :-

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Special Condition of Contract

Price Adjustment

1.1. Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formula given below.

- (a) The cost of materials and electrical energy supplied by the employer, if any at fixed prices shall be excluded from the scope of price adjustment.
- (b) The price adjustment shall apply for the work done from the start date upto end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.
- (c) The price adjustment shall be determined during each quarter from the formula given in the contract data.
- (d) Following expressions and meaning are assigned to the work done during each quarter.

R = Total value of work done during the quarter.

1.2. To the extent that full compensation for any rise or fall costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

The formula (e) for adjustment of price are :

R = Value of work as defined in Special Conditions of Contract

Adjust for Labour Component

- (I) Price adjustment for increase or decrease in the cost due to labour shall be paid in accordance with the following formulas.

$$VL = 0.85 \times P1 / 100 \times (L1 - L0) L0$$

VL = increase or decrease in the cost of work during the quarter under consideration due to changes in rates for local labour.

L0 = The average consumer price index for industrial workers for MADURAI Center for the quarter preceding the date of opening of Bids as published by Labour Bureau, Minister of Labour, Government of India.

L1 = The average consumer price index for industrial workers for MADURAI Center for the quarter under consideration as published by Labour Bureau, Minister of Labour, Government of India.

P1 = Percentage of labour component of the work.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Adjustment for cement component.

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

$$V_c = 0.85 \times P_c / 100 \times R \times (C_i - C_o) / C_o$$

V_c = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for cement.

C_o = The all India average wholesale price index for the quarter preceding the date of opening Bids as published by the Ministry of Industrial Development Government of India, New Delhi.

P_c = Percentage of cement component of the work.

C_i = The all India average wholesale price index for the cement for the quarter under consideration as published by Ministry of Industrial Development Government of India, New Delhi.

Adjustment of Steel component.

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

$$V_s = 0.85 \times P_s / 100 \times R \times (S_i - S_o) / S_o$$

V_s = Increase or decrease in the cost of work during the quarter under consideration due to changes in the rates for steel.

S_o = The all India average wholesale price index for steel (Bars and Rods) for the quarter preceding the date of opening Bids as published by the Ministry of Industrial Development, Government of India, New Delhi.

S_i = The all India average wholesale price index for steel (Bars and Rods) for the quarter under consideration as published by the Ministry of Industrial Development Government of India, New Delhi.

P_s = Percentage of steel component of the work.

Note :- For the application of this clause, index of Bars and Rods has been chosen to represent steel group.

Adjustment of Bitumen component.

(iv) Price adjustment for increase or decrease in the cost of bitumen shall be paid in accordance with the following formulas.

$$V_b = 0.85 \times P_b / 100 \times R \times (B_i - B_o) / B_o$$

V_b = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for bitumen

B_o = The average official retail price of bitumen at the IOC depot at MADURAI on the day 30 days prior to date of opening of Bids

B_i = The average official retail price of bitumen at the IOC department at MADURAI for the 15th day of the middle calendar month of the quarter under consideration.

B_1 = Percentage of bitumen component of the work.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

Adjustment of POL (Fuel and Lubricant) component.

- (v) Price adjustment for increase or decrease in the cost of POL (Fuel and Lubricant) shall be paid in accordance with the following formulas.

$$V_f = 0.85 \times P_f / 100 \times R \times (F_i - F_o) / F_o$$

V_f = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for fuel and lubricant.

F_o = The average official retail price of High Speed Diesel (HSD) at the existing consumer pumps of IOC at MADURAI on the day thirty days prior to the Date of opening of Bids.

F_i = The average official retail of HSD at existing consumer pumps of IOC at MADURAI for the 15th day of the middle calendar month of the quarter under consideration.

P_f = Percentage of fuel and lubricants component of the work.

Note :- For the applicant of this clause, the price of High Speed Diesel Oil has been chosen to represent fuel and lubricants group.

Adjustment of Local Materials.

- (vi) Price adjustment for increase or decrease in the cost of local materials other than cement, steel, bitumen, and POL procured by the contractor shall be paid in accordance with the following formulas.

$$V_m = 0.85 \times P_m / 100 \times R \times (M_i - M_o) / M_o$$

V_m = Increase or decrease in the cost of work during the quarter under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL.

M_o = The all India wholesale price index (all commodities) for the quarter preceding the date of opening of Bids, as published by the Ministry of Industrial Development, Government of India, New Delhi.

P_m = Percentage of local material component (other than cement, steel, bitumen and POL) of the work.

The following percentage will govern the price adjustment for the entire contract :-

1. Labour	-	PI	}	:-	68 %	(Not Applicable)
and Other Materials-		Pm				
2. Cement	-	Pc		:-	19 %	
3. Steel	-	Ps		:-	4 %	
4. Bitumen	-	Pb		:-	0	
5. POL	-	Pf		:-	9%	
Total				:-	100%	

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

The Proportion of Payments retained (retention money) shall be 6% from each bill

Subject to a maximum of 5% of final contract price

The liquidated damages for the whole of the works are

Rs. 6221/- per day and that for the milestone are as under:

For Milestone I Rs. 3144 /- per day

For Milestone II Rs. 681 /- per day

For Milestone III Rs. 2396 /- per day

The Maximum amount of Liquidated damages for the whole of the works
is ten percent of final contract price.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

AMENDMENT

(Issued in Govt. P.W.D., Letter No. 2163/Y2/95-l/dU9.9.96)

In the said preliminary specifications after clause 56.3 the following clauses shall be inserted, namely:

56.4 In cases where the Government under the terms of the contract with the contractor are liable to supply any materials, article or things to the contractor for the performance by him of his part of the contract, the executive Engineer, may at his absolute discretion extend the time with in which such materials, articles or thing maybe supplied by the Government, and the Government. may supply to the contractor such materials, articles or things within the time so extended without any liability on their part to compensate the contractor by reason of the extension of time for the supply of the materials, articles or things.

56.5 In cases where the Government under the terms of the contract are liable to supply any materials, articles or things to the contractor for the performance by him of his part of the contract and the Government for any reason are unable to supply such materials, articles or things either within the time specified in the contract or within the time extended under clause 56.4 the Executive Engineer may at his discretion or at the request of the contractor determine the whole or any part of the contract which cannot be performed by reason of the failure to supply such materials, articles or things and the contractor shall not be entitled to claim any damages or compensation in respect of such determination. The contractor shall however, be paid the value of the work already done by him and the cost of the materials articles or things if any collected by him up to the date of such determined and left unused on the work-spot (Which shall be taken over by the Executive Engineer either at the contract rates or at values deducted form the through rates included in the contract) when the contract is determined at the discretion of the Executive Engineer, he shall give notice in writing to the contractor and the decision of the Executive Engineer to determine the contract shall be final and binding on the contractor

Explanation :

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

56:6 If, at any time after the acceptance of tender the Government shall, for any reason what so ever not required the whole or any part of the works to be carried out, the Executive Engineer shall give notice in writing of the fact to the contractor who hare no claim to any compensation or other payments what so ever, on account of any profit or advantage he might have derived from the Execution of the work in full but which he did not drive in consequence of the termination of the works, he shall be paid at contract rates, for the work executed by him including any additional works such as clearing of site etc. may be rendered necessary by such determination. He shall also be allowed a reasonable payment as decided by the authority which accepted the tender, for any expense incurred by him on account of labour and materials, articles or thing collected, but which could not be utilized on the works as verified by the Executive Engineer such decision shall be final and binding on both the parties and shall not be subject to arbitration under clause 69

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

ADDITIONAL CONDITIONS OF CONTRACT

SCHEDULE – D

The Contractor shall at his own expense provide arrangements for the provision of foot wear 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. The government shall be entitled to provide same and recover the cost from the contractor.

When there are complaints of non-payment of wages to the labourers bills of the contractor may be withheld pending a clearance certificate from the labour department.

PWD SAFETY CODE

GENERAL RULES AS TO SCAFFOLDS :

1. Suitable scaffolds shall be provided for workmen for all works that cannot be safely done from a ladder or by other means. When a ladder is used an extra mazdoor shall be engaged for holding the ladder and the ladder shall be given an inclination not steeper than 0.25 to 1 (0.25 horizontal to 1 vertical). When the ladder is used for carrying materials as well suitable foot holds and hand holds shall be provided on the ladder.
2. A scaffold shall not be constructed, taken down or substantially altered, except (a) under the supervision of a competent and responsible person, and (b) as far as possible by competent workers possessing adequate experience in such work.
3. All scaffolds and appliances connected therewith and all ladders shall.
 - a. be of sound material.
 - b. be of adequate strength having regard to the load strain to which they will be subjected and
 - c. be mentioned in proper condition.
4. Scaffolding or staging more than 3.5 metre above the ground or floor shall have a guard rail properly attached, bol-braced and otherwise secured at least 0.9 M above for floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.
5. Scaffolds shall be so constructed that no part there of can be displaced in consequence of normal use.
6. Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.
7. Before installing lifting gear or scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.
8. Working platform, gangways and stairways should be so constructed that no part there can save unduly or unequally. If the height of the platform or the gangway or the stairways more than 3.5 m above ground level or floor level they should be closely boarded, should have adequate width and should be suitable fenced as described in (4) above.
9. Every opening in the floor of a building or in a working platform shall be provided suitable fencing or railing for minimum height of 0.9 metre to prevent the fall of persons or materials.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

Excavation and Trenching :-

11. Trenches :- 1.2 metres or more in depth, shall at all times be supplied with at least one ladder for each 30 metres in length or fraction thereof. Ladder shall be extended from bottom of the trench to at least 0.8 metre above the surface of the ground. The sides of the trenches which are 1.5 metres or more in depth shall be stepped back to give suitable slope or hold securely by timber bracing, so as to avoid the danger of sides to collapse.
12. Demolition :- Before any demolition is commenced and also during the process of the work.
- a. All roads and open areas adjacent to the work site shall either be closed or suitably protected.
 - b. No electric cable or apparatus which is liable to be a source of danger over a cable apparatus used by the operator shall remain electrically charged.
 - c. All practical steps shall be taken to prevent danger to persons employed from risk fire or explosion or flooding. No floor, roof or other part of the building shall be overloaded with debris or materials as to render it unsafe.
13. All necessary personal safety equipment as considered adequate by the Executive Engineer shall be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use, and the contractor should take adequate steps to ensure proper use of equipment by those concerned.
- a. Works employed on mixing asphaltic materials, cement and lime mortars shall be provided with protective footwear and protective goggles.
 - b. Those engaged in white washing and mining or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.
 - c. Those engaged in welding works shall have protective goggles and protective clothing and seated at sufficiently safe intervals.
 - d. Those engaged in welding works shall be provided with welder's protective sight lieges.
 - e. When workers are employed in sewers and man holes, which are in use, the contractor shall ensure that the manholes covers are opened and are ventilated at least for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.
 - f. The contractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting the following precautions shall be taken.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

- i. No paint containing lead and lead product shall be used except in the form of past or ready
 - ii. Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.
 - iii. Overalls shall be supplied by the contractors to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
 - iv. When workers are employed in dangerous occupations like work with hot bitumen, drilling operations, etc., where are likely to prove dangerous resulting in Physical damage and casualty, adequate protection of the workers should be provided.
14. When the work is done near any place where there is risk of drawing all necessary equipment's should be provided and kept ready for use and all necessary steps taken for prompt secure of any person in danger and adequate provision should be made for prompt first aid treatments of all injuries likely to be sustained during the course of the works.
15. (a) Hoisting machines and tackle including their attachments anchorage's and supports shall be good mechanical construction, sound materials and adequate strength and free from patent defect and shall be kept in good repair and in good working order. Ever rope used in hoisting or lowering materials or as a means of suspension shall be of suitable quality and adequate strength and free from patent defect.
- (b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in control of any hoisting machine, including the scaffold winch or give signals to the operator.
- (c) In the case of every hoisting machine and of every chain ring, hook shackle level and pulley used in hoisting or lowering or as a means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine and all year referred to above shall be plainly marked with the safe working load, each safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any hoisting machine or of any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
16. Motors, gearing, transmissions, electric wiring and other dangerous parts of hoisting appliance shall be provided with efficient safeguards. Hoisting appliances shall be provided with such means as will request to a minimum the risk of the accidental descent of the load. Adequate precautions shall be taken to reduce to a minimum the risk of any part of a suspended load becoming accidentally displaced.
- When workers are employed on electrical installations which are already energised insulting mats wearing apparel such as gloves sleeves and boots as may be necessary should be provided. The workers and carry keys or other materials which are good conductors of electricity.
17. These safety provisions should be brought to the notice of all concerned by display on a notice board at a prominent place at workshop. The person responsible for the compliance of the safety code shall be named by the contractor/
18. To ensure effective enforcement of the rules and regulations relating to safety precautions, the arrangements made by the contractor shall be open to inspection by the Labour Officer, Executive Engineer of the Department or other representative.
19. Notwithstanding the above clauses (1) to (18) there is nothing in these to exempt the contractor from the operations of any other Act of rules in force in the Republic India.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

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

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

1. Application : These rules shall apply to all building and construction works in change of P.W.D.
2. Definition : (i) "Work Place: means a place at which an average fifty or more workers are employed in connection with construction work.
(ii) Large work place means a place at which an average 500 or more workers are employed in connection with construction work.

3. FIRST AID:

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

b) At large work places, where hospital facilities are not available within easy distance of the works, first aid posts shall be established and be run by a trained compounder.

c) Where large work places are remote from regular hospitals an in-door ward shall be provided with one bed for every 250 employees.

Where large work places are situated in cities, towns or in their urbans and no beds are considered necessary owing to the proximity of city or town hospitals, suitable transport shall be provided to facilitate removal of urgent cases to these hospitals. AT other work places, some conveyance facilities. such as a car shall be kept readily available to take injured persons or persons suddenly taken seriously ill to the nearest hospital.

4. DRINKING WATER:

i) Water of Good Quality fit for drinking purposes shall be provided for the work people on a scale of not less than 15 liters per head per day.

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

iii) Every water supply store shall be at a distance of not less than 15 metre from any latrine drain or other source of pollution, where water has to be from an existing well which is within such prominently of latrine, drain or any other source of pollution such the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trapdoor, which shall be dust and waterproof.

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

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

5. WASHING AND BATHING PLACES.

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

6. Latrines and Urinals: There shall be provided within the precinct of every work place latrines and urinals in an accessible place and accommodations, separately for each of them shall be on the following scales or the scale as directed by Executive Engineer in any particular case.

	Seats
i. Where the No. of persons employed does not exceed to 50	2
ii. Where the No. of persons employed does not exceed to 100	3
iii. For every additional 100	3

If women are employed separate latrine and urinals screened from those for men shall be provided on the same scales.

Except in work places provided with water flushed latrines connection with water borne seepage system, all latrines shall be provided with receipt able on dry earth system which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary conditions. The receptacles shall be replaced inside or outside at least once a year.

The excretos from the latrines shall be disposed off and the contractor's expenses in outway pits approved by the local Public Health Authority. The contractor shall also employ adequate No. of scavengers and conservancy staff to keep the latrine and urinals in a clean and condition.

7. SHELTERS DURING REST: At every work site shall be provided free of cost two suitable sheds one for male and other for rest for use of labourers separately for men and women.

8. CRECHES: At every work place at which 50 or more women workers are ordinarily employed there shall be provided two huts of suitable size for the use of children under age of 6 years belonging to such women. One hut shall be used for infants games planned the other as their bedroom. The huts shall not be constructed on a lower standard than the following.

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

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

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

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

d) The crèche or crèches shall be properly maintained and necessary equipment like toys etc, shall be provided.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

9. CANTEENS: A cooked food canteen on a mode rate scale shall be provided for the benefits of workers if, it is considered expedite.

10. SHEDS FOR WOMEN:

The contractor should provide at his expenses sheds for housing his women. The shed shall be on a standard not less than the cheap shelter type to live in which the work people in the locality are accustomed to. A floor area of about 1.8 metres X 1.5 metres for two persons shall be provided. The sheds to be in rows with 1.3 metres clear space between shed and 9 metres clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons each, each unit to have a clear space of 12 metres around.

11. Ambulance facility :-

Where large work place are situated in cities, town or their urban and no bedsare considered necessary owing to the proximity of city or town hospitals suitable transport shall be provided with facilities for removal of urgent case to those hospitals. At other workplaces same conveyance facilities such as car, shall be kept readily available to take injured persons and person suddenly taken serious ill, to the nearest hospitals.

12. Compliance under the EPF & MP Act 1952 in respect of the employee engaged by or through contractors.

It should be ensured that the agencies and contractors shall have provident fund code number and all the contract employees deployed by them are enrolled as members of Provident Fund. As per paragraph 30 (3) of the Employee's Provident Fund scheme 1952 which provides that it shall be the responsibility of the principal employer to pay both the contributions payable by him in respect of the employees directly employed by him and also in respect to the employees employed by or through a contractor.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

PAYMENT FOR ADDITIONS AND DEDUCTIONS FOR COMMISSIONS.

1. No. authorised variation shall vitiate the contract but additions and omission shall be measured up and dealt with in accordance with clause 58.2.
2. If there is no rate in Schedule – A for additional work ordered to be carried out by the Executive Engineer when prior to execution of the additional work a rate for the additional work shall be worked out in accordance with the method, indicated in 59.3 and with the rate agreed upon, a supplemental agreement shall be entered in the proper departmental form signed and dated by the contractor and Executive Engineer and or any other officer for the time being authorised to accept such agreement and this supplemental agreement, shall on such acceptance form part of the original agreement. A copy of the supplemental slip shall be given to the contractor.
3. The rate for additional works shall be derived from the rate for similar items of work in the accepted agreement.

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

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

If the rates cannot be determined as above, the rates shall be fixed on the cost of labour and materials plus 10% thereon, provided the vouchers shall have been delivered to the Executive Engineer within 7 days after such work is completed. If the Executive Engineers that the vouchers are unduly high, the Executive Engineer can value the work as reasonable and fair and make payment if the value of payment is less than Rs. 1000/-. If the value of additional payment exceeds Rs. 1000/- the contractor shall have the right to submit the matter to arbitration.

An amount of 2% of the value of work done including cost of materials supplied departmentally such as cement, steel etc. will be deducted from the contractors bills of the time of payment towards income tax as per I.T. Act.

Security Deposit : -

Additional security Deposit will have to be paid by successful tenderer if called for.

Income Tax :-

An amount of 2% of value of work done as per Income Tax act.

Sub Clause under Arbitration Clause.

The Contractor shall within three months of the date of completion of the works specify the disputes, claims and the amounts involved and write to the Engineers accordingly, failing which it will be deemed that the contractor will not take recourse to Arbitration.

Contractor

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

GENERAL CONDITIONS OF CONTRACT

A. PREFACE

I. Intent and reference to TamilNadu Building Practice

It is intended by these Tamilnadu Practice to describe;

- a. The character of the materials to be used
- b. The method of execution of work and
- c. The contractor's responsibilities to the Public, Government and his workmen and general contract conditions which are to be accepted by every contractor who executes work entrusted to him by the Department.

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

1.3 The abbreviation "I.S." shall mean 'Indian Standard'

2. Applicability of the Tamilnadu Building Practice

2.1 It shall be unnecessary to include in any contract documents a specification for any item of work which is defined

in the tender notice or in the contract schedule of work to be done by a Tamilnadu Building Practice number (TNBP No.) The fact that the item is defined as specification, shall mean that the contractor is to execute the work according to such specification modified as may be necessary by an addendum specification for that particular item of work. In the absence of specification for any work or material in the T.N.B.P. such work should be carried out in accordance with the instruction given by the Executive Engineer.

2.2 THESE GENERAL CONDITIONS OF CONTRACT SHALL APPLY TO ALL AGREEMENTS ENTERED INTO BY CONTRACTORS WITH THE PUBLIC WORKS DEPARTMENT OR HIGHWAYS AND RURAL WORKS DEPARTMENT AND shall form an inseparable condition of contract and it shall not be necessary to append a copy of the same to the agreement.

3. Contractor to sign in the Divisional (or the Sub- divisional) copy of the T.N.B.P.

3.1 Every Contractor who executes work for the Public Works Department or the Highways and Rural Works Department shall carefully study the specification for all items of work which are included in the schedule for work to be done and his obligation under the "General Conditions of Contract" which apply to all agreements, and he shall sign in the Divisional Office copy of the T.N.B.P. (or the Sub-Divisional Office copy if so arranged by the Executive Engineer) as evidence that he understands clearly the conditions of contract governing his agreement and accepts the same.

32 It shall not be necessary for the contractors to sign the Divisional office copy of the T.N.B.P. for every contract awarded to him, but his signature therein will be evidence that he accepts the conditions of contract (which include the

specifications) as detailed in the T.N.B.P. for every contract into which he enters. It shall also be the contractor's responsibility by frequent perusal of the Divisional Office (or the Sub Divisional Office) copy to become conversant with sanctioned alterations or additions made to the T.N.B.P. as soon as they are made. A separate volume of addenda to the T.N.B.P. will be maintained in each Division (or sub division office) as the case may be, in which will be entered all sanctioned corrections and additions. This must also be studied and signed by every contractor before executing an agreement. Interleaving corrections slips will not be made for this purpose. The contractor should purchase copy of the T.N.B.P. for his reference while executing work.

4. Sub-specifications

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

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

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

6. Power of Superintending Engineer and Executive Engineers to supplement or alter the T.N.B.P.

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

A-1. DEFINITIONS AND INTERPRETATIONS

7. Definition of terms

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

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

b. No delegation by

b) No delegation by Executive Engineer which affects agreements

it is however, to be distinctly understood that the Executive Engineer or the Superintending Engineer or the higher authority who is vested with the powers of acceptance of the particular agreement under reference will make no delegation of powers to such assistants or subordinates with in any way affects the agreement and its contract condition when such agreement is to be or has been accepted by the Executive Engineer or by the other higher authority respectively. The duties of such assistants or subordinates will be solely duties of supervision to ensure compliance with contract conditions.

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

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

12 Works importing the singular only also include the plural and vice-versa where the context requires.

NOTE: The terms section officer, Assistant Executive Engineer, Executive Engineer, Superintending Engineer and Chief Engineer, used in the following clauses shall where the context so requires, be construed as also including officers of the corresponding grade in the Highways and Rural Works Department.

8. Evidence of Experience

Tenderers shall, if required, present satisfactory evidence to the Executive Engineer that they have been regularly engaged in constructing such works, as they propose to execute and that they are fully prepared with the necessary capital, machinery and materials to begin the work promptly and to conduct it as required by T.N.B.P. and the other specifications for the particular work if tendered for, in the event of their tender being accepted.

9. Legal address Notices

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

9.2 Nothing contained in the agreement and its contract conditions shall be deemed to preclude or render inoperative

the service of any notice, letter or other communication upon the contractor personally.

B. STATEMENT OF APPROXIMATE QUANTITIES IN SCHEDULE – A

10.1 The quantities mentioned in tender notices and in agreement schedule - A, are worked out from the relevant drawing in office and may or may not be the actuals required for execution. The Executive Engineer does not expressly or by implication agree that the actual amount of work to be done will correspond therewith but reserves the right to increase or decrease the quantity of any class or portion of the work as he deems necessary.

10.2 Tenderers must satisfy themselves by a personal examination of the site of the proposed work, by examination of the plans and specifications and by others means as they prefer as to the accuracy and sufficiency of the statement of quantities and all conditions affecting the work and shall not at any time after the submission of their tender, dispute or complain of such statement of 'quantities or assert, that there was any misunderstanding in regard to the nature or amount of the work to be done nor in consequence apply for extension of time for completion beyond the agreement date.

11. Approximate not to mean deviation from drawings and specification

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

12. To compare tenders

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

C DRAWINGS AND SPECIFICATIONS

13. Purpose

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

14. Conformance

14.1 The works shall be carried out in accordance with the drawings and specifications which form part of the contract and in accordance with such further drawings, details and instructions, supplementing or explaining the same as may from time to time be given by the Executive Engineer.

14.2 If the work shown on any such further drawings or details, or other work necessary to comply with any such instructions, directions, or explanations, be in the opinion of the contractor, of a nature which the schedule rate in the contract does not legitimately cover he shall before proceeding with such work, give notice in writing to this effect to the Executive Engineer and contractor failing to agree as to whether or not there is any

excess rate to be fixed and the Executive Engineer deciding that the contractor is to carry out the said work, the contractor shall accordingly do so, and the question whether or not there is any excess and if so the amount thereof, shall failing agreement, be settled by an arbitrator as provided in the arbitration clause, unless the subject is one which is left to the sole discretion of the Executive Engineer under the clauses of these conditions of contract and the contractor shall be paid accordingly.'

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

15. Variations by way of modifications, omissions or additions.

15.1 For all modification, omissions from or additions to the drawings and specification, the Executive Engineer will issue revised plans, or written instructions or both and no modification, omissions or additions shall be made unless so authorised and directed by the Executive Engineer in writing.

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

15.3 The contractor shall submit to the Executive Engineer a statement giving details of the claims for any additional work within 30 days of the work and no claim for any such work will be considered which has not been included in the statement.

16. Copies of Drawing and Specifications

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

17. Signed drawing - No authority to the Contractor

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

D. MATERIALS AND WORKMANSHIP

18. To be the best quality

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

18.2 Samples of materials shall be furnished at the contractor's expense to the Executive Engineer when called for in the tender notice or ordered to be furnished by the Executive Engineer prior to execution of any work.

19. Conversion for proportions

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

For example,

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

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

20. Measurement and mixing

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

21. Data

21.1 The materials and labour utilised in the execution of work by the contractor shall not be less than that given in the Tamilnadu P.W.D Standard Data for the relevant item.

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

22. Layout of materials stacks

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

23. Source of purchase of materials and stores

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

24. Contractor liable for materials supplied by Government

24.1 The contractor shall be responsible for all materials and other articles and things which may be supplied by Government from the time he takes delivery thereof and shall make good any loss, damage wastage or undue wear and tear that may take place from whatever cause and pay to Government for such loss, damage, wastage or undue wear and tear such sum as the Executive Engineer may determine.

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

24.3 Deleted..

25. Test inspection and rejection of defective materials and works

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

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

25.3 The Executive Engineer shall have power to reject at any stage, any work which he considers to be defective in quality of materials or workmanship and he shall not be debarred from rejecting wrought materials by reasons of his having previously passed them in an unworked condition. Any portion of the work or materials rejected or pronounced to be inferior or not in accordance with the drawing and specification, shall be taken down and removed from the work site at the contractor's expense, within 24 hours after written instructions to the effect have been given by the Executive

Engineer. Replacement shall at once be made in accordance with the specifications and drawings at the contractor's expense.

25.4 In case of default on the part of the contractor to carry out such orders the Executive Engineer shall have power to employ and pay other persons to carry out the orders at the contractor's risk and all expenses consequent thereon incidental thereto shall be borne by the contractor.

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

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

26. Defects, shrinkages, etc, after completion

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

26.1 (A) The shrinkage period of six months referred to in main clause 26.1 above, will be five years in respect of all contracts for construction of original buildings either semi-

permanent or permanent to ensure structural stability of the building.

(G.O.Ms. No. 181 PWD 28.1.86)

262 Provided that in the event of Government taking over portions of the works as and when they are completed the liability of the contractor under this clause shall extend to a period of six months (or five years as the case may be) from the date of final taking over the of the work irrespective of the actual dates on which portion of the works were taken over.

27. Executive Engineer's Decision

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

28. Dismissal of workmen

28.1 The contractor shall employ in and about the execution of the works only such persons as are careful, skilled and experienced in their several trades and callings and the Executive Engineer shall be at liberty to object to and request the contractor to remove from the works any person employed by the contractor in or about the execution of the works who in the opinion of the Executive Engineer misconducts himself or incompetently or negligent in the proper performance of his duties and such persons shall not be again employed upon the works without the permission of the Executive Engineer.

D.1 GENERAL OBLIGATIONS

29. Contractor's maistri or agent and contractor's staff

29.1 The contractor shall in his own absence keep constantly on the works a competent maistry or agent and any directions or explanations given by the Executive Engineer or his representatives to such maistri or agent shall be held to have been given to the contractor. The contractor shall further provide all staff which is necessary for the proper supervision, execution and measurement of the work to ensure full compliance with the terms of the contract.

30. Government Maistries or agents

30.1 The Government may be represented on the work by an agent clerk of the works, or maistri who is not borne on the official or officers and subordinates of the P.W.D. or Highways and Rural Works Department. He (if appointed) shall, in the absence of the Executive Engineer, furnish the contractor with

the Executive Engineer's or his representative's instructions of the works and the contractor shall duly comply with such instructions and directions to the progress and execution of the

works and the contractor shall duly comply with such instructions and directions and shall on the the written requisition of the maistri clerks of works or agent, stay the further progress of any portion of the works which in his judgement is being constructed with unsound or improper material or workmanship, until the opinion and determination of the Executive Engineer shall be obtained thereon, but such maistri clerk of works or agent is to have no power whatever to order any extra works or deviation from the specifications and drawings.

E. INCLUDED IN CONTRACT RATES

3.1 Defining contract schedule rates

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

32. Carriage

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

32.2 Wherever the term "carriage" of "conveyance" is used in a schedule item, it shall in the absence of other schedule provisions or modifying description in the specification, be taken to include all leads, lifts loading, unloading and stacking in uniform stacks to the satisfaction of the Executive Engineer with careful attention to close packing in case of materials which are to be measured in stacks as a basis of payment for finished work.

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

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

32.3 When cart or vehicles of any sort are engaged by the day, the quantity of materials to be conveyed, the distance to be travelled and the number of trips to be made shall, if he considers necessary be fixed by the Executive Engineer.

32.4 The contractor is responsible for making good all loss in transporting materials entrusted to him or his agents, whether caused by wastage, breakage, theft or any other cause.

325. No payinens shall, in any case, be made for the return trips with carts empty. Where there are loads also for the return trip the agreement rates should allow for the reduced cost thereby on each set of materials so conveyed.

33. Constructions plant

33.1 The contractor shall include in his tendered price and shall provide and install all necessary construction plant and shall use such methods and appliances for the performance of all the operations connected with the work embraced under the contract as will secure a satisfactory quality of work and rate of progress which in the opinion of the Executive Engineer will ensure the completion of the work within the time specified. If at any time before the commencement, or during the progress of the work, or any part of it such methods or appliances appear to the Executive Engineer to be insufficient or inappropriate for securing the quality of the work required or the said rate of progress, he may order the contractor to increase their efficiency or to improve their character, and the contractor shall comply with such orders, but the failure of the Executive Engineer to demands such increase of efficiency or improvement shall not relieve the contractor from his obligation to secure the quality of work and the rate of progress required by the contract and the contractor alone shall be responsible for the efficiency and safety of his plant, appliances and methods.

33.2 It is however, open to Executive Enginner to lend or supply to the contractor any tools, implements, materials and machinery that the Executive Engineer may consider desirable but for any such tools, implements, materials and machinery that may be lent or supplied to contractor by Government, the contractor shall pay such deposit and hire, or purchase price as may be determined by the Executive Engineer. All articles that may be so lent or hired to the contractor shall be returned in good serviceable condition by him to the Executive Engineer before the final bill for work is paid and any shortage or damage shall be recovered from the contractor in the final bill at such rate as may be determined by the Executive Engineer after making such allowance as he may consider suitable for fan- wear and tear.

34. Scaffolding instructions

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

35. Temporary structure

35.1 The Contractor shall erect and maintain at his own cost temporary weather proof sheds at such places and in a manner approved by the Executive Engineer for keeping materials under cover. The contractor shall also provide and maintain at

his won expenses such temporary fences, guards, bridges and roads as may be necessary for the execution of his contract work or for safeguarding or accommodating the public. If the Executive Engineer shall order any departure from the arrangements made of the contractor, the contractor shall coraply with such orders as the Executive Engineer may issue to safeguard or accommodate the public Sheds for housing workmen shall be provided at the contractor's expense if, in the opinion of the Executive Engineer, such are necessary or desirable,

36. Water and Lighting

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

37. Sun protection keeping dry and pumping

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

38. Tools and Seigniorage

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

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

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

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

38.4 No seigniorage shall be charged where due for materials quarried from the P.W.D. or other Government quarries

Assistance as necessary will be given to the contractor by the department to obtain access to quarries approved by the Executive Engineer. No plot rent shall be charged for materials stacked on the Government lands during the course of construction provided all such materials are removed within one month after the work is completed.

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

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

39. Setting out works

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

40. Cleaning up during progress and for delivery

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

F. RESPONSIBILITIES AND LIABILITIES OF THE CONTRACTOR

41. Observance of laws, local regulations and notices, Attachments

41.1 The contractor shall confirm to the regulations and bylaws of any local authority and or of any water or lighting companies with those systems the structure is proposed to be connected and shall before making any variations from the drawings and specification that may be necessitated by so confirming, give to the Executive Engineer written notice., specifying the variations proposed to be made and thereasons for making them and apply for instructions, thereon. In case the contractor shall not received such instruction within seven days, he shall proceed with the work confirming to the provisions regulating or by-law in question and variation in the drawing or specifications so necessitated shall be dealt with under clause 59.

41.2 The contractor shall give all notices required by the said Act, regulations or by-laws and pay all fees in connection therewith unless otherwise arranged and decided on in writing with the Executive Engineer. He shall also ensure that no

attachments are made against materials of work forming part of or for the use of the contract. In every case referred to in this clause the contractor shall protect and indemnify Government against any claim or Liability arising from or based on the violation of any such law, ordinance, regulation order, decree, or attachment whether by himself or by his employees.

42. Accidents - Hoarding - Lighting Observations – Watchmen

42.1 When excavations have been made or obstacles have been put in public thorough fares or in places where there is any likelihood of accidents, the contractor shall comply with any requirement of law on the subject and shall provide suitable hoarding lighting and watchmen as necessary.

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

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

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

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

42.6 In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with or cause to be complied with all the rules framed by the Government from time to time for the provision of health and sanitary

arrangements to workers employed by P.W.D. and Highways and Rural Works Department and their contractors (vide appendix) In case the contractor fails to make arrangements and provide necessary facilities as aforesaid the Executive Engineer shall be at liberty to make arrangements and provide facilities as aforesaid and recover the costs incurred in that behalf from the contractor.

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

42.8 In respect of all labour directly or indirectly employed in the work for the performance of the contractors part of this agreement the contractor shall arrange to furnish in triplicate particulars for each work in the proforma Vide Appendix XXXVIII by the end every month to the Executive Engineer in charge of the work.

43. Blasting

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

44. Protection of Existing and Adjoining premises

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

45. Permit other workmen - Co.operation - Afford Facilities

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

45.2 The contractor shall, at all times co-operate assist, attend on, and afford facilities for such specialists as maybe employed by the Executive Engineer on other works in

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

45.3 When two or more contractors are engaged on installation or construction work in the same vicinity the Executive Engineer shall have authority to direct the manner in which each shall conduct the work so far as it affects other contractors.

46. Holes for water services, gas electrical and Sanitary fittings

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

47. Contract's risk and insurance.

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

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

48. Holidays

48.1 Subject to any provision to the contrary contained in the contract name of the permanent work shall save as hereinafter provided be carried on during the night or on Sundays and other holidays without the permission in writing of the Executive Engineer or of the officer in-charge of the work, save when the work is unavoidable or absolutely necessary for the safety of life or property or for the safety of the works in which case the contractor shall immediately advise the Executive Engineer.

6. MISCELLANEOUS

49. Sand and Gravel

49.1 The contractor shall not make any excavations upon the site for the purpose of obtaining gravel, sand or soil other

than that shown or implied by the drawings, except with the previous permission of the Executive Engineer.

50. Old Curiosities

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

51. Assignment or sub-letting

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

52. Specialists

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

53. Ratification of the orders of the Executive Engineer

53.1 Should the acceptance of the tenders be beyond the authorised powers of the Executive Engineer as laid down the P.W.D. code, the orders and decisions of such Executive

- Engineer with regard to
 - (a) extension of time for completing the contract will be subject to the ratification of the Superintending Engineer for all works for which tenders were accepted by the Engineers of Public Works Department including Superintending Engineer, Chief Engineer / Board of Engineers and Government and
 - (b) the termination of contract or of employment of specialists for certain portion of the works will be subject to the ratification of the Chief Engineer for all works for which tenders were accepted by Engineers of PWD including Superintending Engineer/Chief Engineer/Board of Engineers and Government.

54. Order Book

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

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

H. DATE OF COMMENCEMENT, COMPLETION, DELAYS, EXTENSION, SUSPENSION OF WORK AND FORFEITURE

55. Date of commencement and completion

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

56. Delays and extension of time

56.1 No claim for compensation on account of delays or hindrances to the work from any cause whatever shall tie except as hereinafter defined.

Reasonable extension of time will be allowed by the Executive Engineer or by the officer competent to sanction the extension for unavoidable delays, such as may result from causes which in the opinion of the Executive Engineer are undoubtedly beyond the control of the contractor. The Executive Engineer shall assess the period of delay or hindrance caused by any written instruction issued by him at twenty five percent in excess of the actual working period so lost. If at any time the Executive Engineer is of the opinion that there has been avoidable delays and the contractor fails to maintain the rate of progress specified in the articles of agreement, it shall be lawful for the Executive Engineer to impose penalty or order forfeiture from the Deposit and sanction the extension of time for such delays, provided however, the penalty and forfeiture shall be governed as per clause 57.2 and 57.3

56.2 In the event of the Executive Engineer failing to issue necessary instructions and thereby causing delay and hindrance to the contractor the latter shall have the right to claim an assessment of such delay by the Superintending Engineer of the Circle. The contractor shall lodge in writing to the Executive Engineer a statement of claim for any delay or hindrance referred to above within fourteen days from its commencement otherwise no extension of time will be allowed.

56.3 Whenever, authorised alterations or additions made during the progress of the work are of such nature in the opinion of the Executive Engineer as to justify an extension of time in consequence thereof such extension of time will be granted in writing by the Executive Engineer or other competent authority when ordering such alterations or additions.

57. Delays in commencement or progress or neglect of work or suspension of works by the contractor and forfeiture of Earnest Money, Security Deposit and withheld amount

57.1 Time shall be considered as the essence of the contract. If at any time the Executive Engineer shall be of the opinion that contractor is delaying commencement of the work neglecting or delaying the progress of work as defined in the tabular statement, "Rate of Progress" in the Articles of Agreement or the contractor fails to maintain the Rate of progress in the Articles of Agreement plus any extension of time or the contractor shall suspend the works, or sublet the work or a portion thereof without the sanction of the Executive Engineer or violates any of the provisions of the contract the Executive Engineer shall so advise the contractor and at the same time demand compliance. If the contractor neglects to comply with such demand within seven days after receipt of such notice, it shall then or at any time be lawful for the Executive Engineer to impose a penalty or forfeiture on this contractor from the deposit or to determine the contract.

57.2 The penalty or forfeiture referred to in Clause 57.1 shall not exceed 5% of the value of work executed and is imposed in cases where the contractor is allowed to proceed with the whole or part and complete the whole or such part of the works. The penalty or forfeiture imposed by the Executive Engineer under this clause is however subject to modification or waiver at the absolute discretion of any authority higher in rank than the Executive Engineer.

57.3 It shall be a further right of the Executive Engineer to give any part of the work to any other contractor at his discretion or have it done departmentally in order to maintain the rate of progress and the contract shall then be determined for only that portion of the work given to the other contractor or done departmentally. The forfeiture under clause 57.2 will in these circumstances be applied and any excess expenditure incurred on this account shall be recovered from the original contractor.

57.4 Determination of the contract referred to in Clause 57.1 shall carry with it the forfeiture of the Security Deposit. After determining the contract, the Executive Engineer shall have the right to give any part of the work to any other contractor in the unexecuted portion of contract, in which case any expenses which may be incurred in excess of such amount which would have been paid to the original contractor if the whole work had been executed by him shall be borne and paid by the original contractor and may be deducted from any money due to him by Government under this contract or any other amount whatsoever. Provided also that if the expenses incurred by the government are less than the amount payable to the contractor at his agreement rate? the difference will not be paid to the contractor.

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

57.6 In the event of the Executive Engineer putting in force all or any of the powers vested in him under the clause 57.4 he may if he so desires after giving a notice in writing to the Contractor take possession of the works and site and all sue' plant and materials thereon (or any ground contiguous thereto) and all such plant and materials as above mentioned shall thereupon be at the disposal of Government absolutely for the purpose of completing the work. After such notices shall have been given the contractor shall not be at liberty to remove from the site of works or from the ground contiguous thereto any plant or materials belonging to him which shall have been placed thereon for the purpose of the above work. Government shall not be liable to make any payment to the contractor on account of use of such plant for the completion of the works under the provisions herein before contained. On taking possession of the materials and stores belonging to the contractor or procured by the contractor and intended to be used for the execution of the work or any part thereof the contractor shall be paid for the same in account, at the contract rates, to be certified thereof shall be final. Otherwise the Government may give notice in writing to the contractor to remove any of his plant or materials from the site and not required for completion of the works, if such plant and materials are not removed with fourteen days after notice and have been so given, Government may remove and sell the same holding the proceeds less the cost of removal and sale, to the credit of the contractor. The certificate of the Executive Engineer as to expense of any such removal and sale shall be final and binding on the contractor.

1. PARTICULARS OF PAYMENT

58. Payment on lumpsum basis or by final measurement in unit prices

58.1 Final measurements need not be taken unless either the contractor or the Executive Engineer claims extras to or deductions from the quantities of schedule - A.

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

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

59. Payment for additions and deductions for omissions

59.1 No authorised variation shall vitiate the contract, but additions and omissions shall be measured up and dealt with in accordance with clause 58.2'

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

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

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

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

59.3.4 If the rates cannot be determined as above, the rates shall be fixed on the cost of lab our and materials plus 10 percent thereon, provided the vouchers shall have been delivered to the Executive Engineer within 7 days after such work is completed. If the Executive Engineer considers that the vouchers are unduly high, the Executive Engineer can value the work as reasonable and fair and make payment if the value of payment is less than Rs. 1,000. If the value of additional payment exceeds Rs. 1",000 the contractor shall have the right to submit matter to arbitration.

60. No payment for unsanctioned extras

60.1 It shall be distinctly understood that no payment whatever will be made to the contractor for variations by way of extras, in cases where such variations have been" made within the written sanction of Executive Engineer.

61. Accounts Receipts and Vouchers

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

62. Fraud, willful neglect or default

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

63. Unfixed materials

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

64. Payments and Certificate

64.1 Payments will be made to the contractor under the certificates to be issued at reasonably frequent intervals by the Executive Engineer or the Sub-Divisional Officer, within 14 days of the date of each certificate an intermediate payment will be made by the Executive Engineer or the Sub-Divisional officer of a sum equal to 95 percent of the value of work, as so certified and the balance of 5 percent will be withheld and retained as security for the due fulfillment of the contract. Under the certificate to be issued by the Executive Engineer or Sub-Divisional Officer on the completion of the entire works, the contractor will receive the final payment of all the money due or payable to him under or by virtue of the contract except security deposit and the withheld amount equal to 2 1/2 percent of the total value of the work done provided there is no recovery from or forfeiture by the contractor to be made under clause 57. The amount with held from the final bill will be retained under. Deposits and paid to the contractor together with the Security Deposit after one year reckoned from the date of completion of work or as soon after the expiration of such period of one year as all defects shall have been made good according to the true-intent and meaning thereof whichever shall last happen. In the event the final bill remains unpaid even after the period of one year aforesaid, the Executive Engineer shall refund the security deposit which included the E.M.D. and also the withheld amount on a separate bill if requested for by the contractor in writing. No certificate of Executive Engineer or Sub-Divisional Officer shall be considered conclusive evidence as to the sufficiency of any work or materials or correctness of measurements to which it relates nor shall it relieve the contractor from his liability to make good defects and provided by the contract. The contractor when applying for a certificate, shall prepare a sufficiently detailed bill based on the original figures of quantities and rates in the contract Schedule-A to the satisfaction of the Executive Engineer, to enable the Executive Engineer or the Sub-Divisional Officer to check the claims and issue the certificate. The certificates as to such of the claims mentioned in the application as are allowed by the Executive Engineer or the Sub-Divisional Officer shall be issued within

fourteen days of the application. No application for a certificate shall be made within fourteen days of a previous application.

64.1 (A) Notwithstanding the above clause, the withheld amount of 2 1/2% from the final bill in respect of contract for construction of original building, will be retained by the Govt. for a total period of one year in lieu of six months period referred to in clause 64.1 above and will be released after the expiry of one year period on execution of an indemnity bond by the contractor to the satisfaction of the Exe. Engr. for a further period of four years to ensure structural stability of the building under clause 26.1 A

64.2 When there are complaints from the labour Department about non-payment of wages to the labourers employed by the Contractor for the execution of works under agreement, the Executive Engineer, shall have full powers to withhold the bills claimed by the contractor pending clearance certificate from the Labour Department and to act as per the direction given by the Labour Department.

65. Interest on money due to the contractor

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

65.2 Whenever the withheld amount reaches Rs. 1,000 or a multiple thereof, the contractor may, at his option, deposit with the Executive Engineer an equal amount in sums of Rs. 1,000 or a multiple thereof, in any of the forms of interest bearing securities recognized for the purpose by the T.N. Public Works Account Code and subject to the provisions thereof contained in which case the equivalent withheld amount shall be paid to him forth with. The contractor will be permitted to exercise the option in this clause, subject only to the condition that the rates of progress contained in the Articles of Agreement is properly maintained.

66. Acceptance of final measurements

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

67. Recovery of money from contractor in certain cases

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

67.2 Recovery under Revenue Recovery Act

Whenever any amount has to be paid by the Contractor in view of the determination of the contract by virtue of clause 57 or any amount that may be due from the contractor is under these presents and the contractor is not responding to the demands for the payment of the said amount, then the Govt. shall be entitled to recover the said amount under the provisions of the Revenue Recovery Act.

68. Contractor dying becoming insolvent insane or imprisoned

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

J. SETTLEMENT OF DISPUTES

69. Arbitrations

69.1 In case of any dispute or difference between the parties to the contract either during the progress or after - the completion of the works or after the determination, abandonment or breach of the contract, or as to any matter or thing arising thereunder except as to the matters left to the sole discretion of the Executive Engineer under clauses 18,20,25-3,27,34,35 and 37 of "General conditions of contract" or as to the withholding by the Executive Engineer of payment of any bill to which the contractor may claim to be entitled, then either party shall up to Rs. 50000/- The Arbitrator shall give detailed reasons in their awards for their findings and conclusion.

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

Upon every and any such reference, the costs of and incidental to the reference and award respectively shall be discretion of the arbitrator, subject to the condition that the amount of such costs to be awarded to either party shall not, in respect of a monetary claim exceed the percentage set out below of any such award irrespective of the actual fees, cost and expense incurred by either party provided that where a monetary claim is disallowed in full the said percentage shall be calculated on the amount of the claim. The arbitrator may determine the amount of the costs to be awarded or direct the same to be

fixed as between solicitor and client or as party and shall direct by whom and to whom and in what manner the same shall be borne and paid.

The percentage above referred to in this clause are 5% on any such monetary award which does not exceed Rs. 10,000.3% on the next Rs. 40,000 or any part thereof 2% on the next Rs. 50,000 or any part thereof and 1% on any excess over Rs. 1,00,000/- provided that the government shall not be liable to any claim in respect of any such dispute or difference until the liability and the amount thereof shall have been referred to and decided by the Arbitrator.

69.2 The fees for Arbitrators shall be levied based on the value of claims referred to for arbitration. The fees shall be calculated at 5% of the first Rs. 10000/- at 3% of the next Rs. 40000/-

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

APPENDIX No. I.

PUBLIC WORKS DEPARTMENTS SAFETY CODE

General Rules as to Scaffolds.

1. Suitable scaffolds shall be provided for workman for all works that cannot be safely done from a ladder or by other means. When a ladder is used an extra Mazdoor shall be engaged for holding the ladder and the ladder shall be given an inclination not steeper than 0.25 to 1 (0.25 horizontal to 1 vertical) When the ladder is used for carrying materials as well, suitable foot holds and hand holds shall be provided on the ladder., i

2. A scaffold shall not be constructed taken down or substantially altered, except (a) under the supervision of competent and responsible person; and (b) as far as possible by competent workers possessing adequate experience in such work. ,

3. All scaffolds and appliance connected therewith and all ladders shall .

- a) be of sound material
 - b) be of adequate strength having regard to the load strain to which they will be subjected and
 - c) be maintained in proper condition
4. Scaffolding or staging more than 3.5 metres above the

ground or floor shall have a guard rail properly attached, braced and otherwise secured at least 0 metres above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such opening as may be necessary for delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from swaying from the building or structure.

5. Scaffolds shall be so constructed that no part thereof can be displaced in consequence of normal use.

6. Scaffolds shall not be overloaded and so far as practicable the load shall be evenly distributed.

7. Before installing lifting gear of scaffolds special precautions shall be taken to ensure the strength and stability of the scaffolds.

8. Working platform, gangways and stairways should be so constructed that to part there can save unduly or unequally. If the height or the platform or the gangway or the stairways is more than 3.5 metres above ground level or floor level they should be closely boarded should have adequate width and should be suitably fenced as described in (4 above)

9. Every opening in the floor of a building or in a working platform shall be provided with suitable fencing or railing for a minimum height of 0.9 metre to prevent the fall of persons or material.

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

Excavation and trenching

11. Trenches -1.2 metres or more in depth, shall at all times be supplied with at least one ladder for each 30 metres in length or fraction thereof. Ladders shall be extended from bottom of the trench to at least 0.8 metre above the surface of the ground. The sides of trenches which are 1.5 metres or more in depth shall be stepped back to give suitable slope or hold

securely by timber bracing, so as to avoid the danger of sides to collapse.

12. Demolition - Before any demolition is commenced and also during the process of the work -

a) All roads and open areas adjacent to the work site shall either be closed or suitably protected.

b) No electric cable or apparatus which is liable to be a source of danger over a cable or apparatus used by the operator shall remain electrically charged.

c) All practical steps shall be taken to prevent danger to persons employed from risk of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render it unsafe.

13. All necessary personal safety equipment as considered adequate by the Executive Engineer shall be kept available for the use of the person employed on the site and maintained in a condition suitable for immediate use and the contractor should take adequate steps to ensure proper use of equipment by those concerned.

a) Workers employed on mixing asphaltic materials cement and lime mortars shall be provided with protective footwear and protective goggles.

b) Those engaged in white-washing and mining or stacking of cement bags or any materials which is injurious to the eyes shall be provided with protective goggles.

c) Those engaged in welding works shall have protective goggles and protective clothing and seated at sufficiently safe intervals.

d) Those engaged in welding works shall be provided with welder's protective sight ligs.

e) When workers are employed in sewers and man holes which are in use, the contractor shall ensure that the manholes covers are opened and are ventilated atleast for an hour before the workers are allowed to get into the manholes, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent accident to the public.

f) The contractor shall not employ men below the age of 18 years and women on the work of painting with products containinign lead in any form. Whereever men above the age of 18 are employed on the work of lead painting, the following precautions shall be taken.

(i) No paint containing lead and lead products shall be used except in the form of paste of ready-made paint.

(u) Suitable face masks should be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.

(in) Overalls shall be supplied by the contractors to workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.

(iv) When workers are employed in dangerous occupations like work with hot bitumen, drilling operations etc., which are likely to prove dangerous resulting in physical damage and casualty, adequate protection of the workers should be provided.

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

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

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

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

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

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

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

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

19. Notwithstanding the above clauses (1) to (18) there is nothing in these to exempt the contractor from the operations of any other Act of rules in force in the Republic of India.

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

The contractor's special attention is invited to relevant clauses of the "General conditions of contract" in the Tamilnadu Building Practice and he is requested to provide at his own expense the following amenities' to the satisfaction of the Executive Engineer.

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∴, Application : These rules shall apply to all building and construction works in charge of P.W.D.

2. Definition : (i) "Work place"¹¹ means a place at which an average fifty or more workers are employed in connection with construction work. •

ii) "Large work place" means a place at which at an averaged 500 or more workers are employed in connection with construction work.

3. First Aid : (a) At the work site there shall be maintained in a readily accessible place, first aid appliance and medicines including an adequate supply of sterilised dressing. and sterilised cotton wool. The appliances shall be kept in good order. They shall be placed under the charge of a responsible person who shall be readily available during working hours.

(b) At large work places where hospital facilities are not available within easy distance of the works first-aid posts shall be established and be run by a trained compounder.

(c) Where large work places are remote from regular hospitals an in-door ward shall be provided with one bed for every 250 employees.

(d) Where large work places are situated in cities towns or in their suburbs and no beds are considered necessary owing to the proximity of city or town hospitals, suitable transport shall be provided to facilitate removal of urgent cases to these hospitals. At other work places some conveyance facilities, such as a car shall be kept readily available to take injured persons or persons suddenly taken seriously ill to the nearest hospital.

4. Drinking Water :

a) Water of good quality fit for drinking purposes shall be provided for the work people on a scale of not less than 15 litres per head per day.

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

c) Every water supply storage shall be at a distance of not less than 15 metres from any latrine, drain or other source of pollutions. Where water has to be drawn from an existing well, which is within such proximity of latrine, drain or any other source of pollution, the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with a trap door which shall be dust and water proof.

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

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

6. Latrines and Urinals: There shall be provided within the precincts of every work place, latrines and urinals in an accessible place and the accommodation, separately for each of them, shall be on the following scale or on the scale so directed by the Executive Engineer in any particular cases.

(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..... 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 receptacle on a dry earth sysem which shall be cleaned at least four times daily and at least twice during the working hours and kept in strictly sanitary conditions. The receptacles shall be tarred inside and outside atleast once a year.

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

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

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

i) Thatched roofs

ii) mud floors and walls.

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

The huts shall be provided with suitable and sufficient opening for light and ventilation. There shall be adequate provision of sweepers to keep the places clean. There shall be two Dais in attendance. Sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned.

The use of the huts shall be restricted to children, their attendants and mothers of the children.

b) Where the number of Women workers is more than 25 hut less than 50, the contractor shall .provided atieast one hut and one Dai to look after the children of women workers.

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

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

9. **Canteens** : A cooked food canteen on a moderate scale shall be provided for the benefits of workers if it is considered expedinet

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

A floor area of about 1.8 metres x 1.5 metres for two persons shall be provided. The sheds to be in rows with 1.3 metres clear space between sheds and a 9 metres clear space between rows if conditions permit. The work people's camp shall be laid out in units of 400 persons, each, each unit to have a clear space of 12 metres alround.

CONTRACTOR

**Superintending Engineer, W.R.D.,
Periyar Vaigai Basin Circle, Madurai.**

SCHEDULE – A

Name of Work :- Modernisation of Right Main Canal of Marudhanadhi Dam in Ayyampalayam Village of Authoor Taluk in Dindigul District (Except bed and canal lining)

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
1	48.00 M ³ (Forty Eight cubic metre only)	Dismantling clearing away and carefully stacking materials useful for reuse for any thickness of walls of Brick / Stone masonry in cement mortar walls under 3 m high as directed by the departmental officers.	18		1 M ³ (One cubic metre)	
2	21.60 M ³ (Twenty One point Six zero cubic metre only)	Dismantling clearing away and carefully stacking materials useful for reuse for any thickness of Plain Cement concrete complying with standard specification and as directed by the departmental officers.	18		1 M ³ (One cubic metre)	
3	31200.00 M ³ (Thirty One Thousand and Two Hundred cubic metre only)	Earth work deploying earth moving machineries for desilting channel and forming bund on either side depositing the earth on banks including jungle clearance etc., complete as directed by the Departmental officers complying with standard specification. Having width up to 3m			1 M ³ (One cubic metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
4	898.47 M ³ (Eight Hundred and Ninety Eight point Four Seven cubic metre only)	Earthwork excavation for foundation with an initial lead of 10m and initial lift of 2 m in hard stiff clay, stiff black cotton, hard red earth, shales, murram, gravel, stoney earth and earth mixed with small sized boulders & hard gravelly soil and refilling the sides of foundation with excavated earth in layers of 15cm thick well rammed and consolidated etc. complete complying with standard specifications and drawings as directed.	20 B & 23		1 M ³ (One cubic metre)	
5	194.50 M ³ (One Hundred and Ninety Four point Five zero cubic metre only)	Providing and placing in position of plain Cement concrete of grade M10 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 40mm weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 10 N/mm ² at 28days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary; laying the concrete in layers of not exceeding 15 cm thick and in bays; compacting and finishing the surface with all leads and lifts; watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications complete as directed by the Engineer in charge of works and as per the technical specifications	30		1 M ³ (One cubic metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
6		Providing and placing in position of plain Cement concrete of grade M15 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 40mm (60%) and 20mm (40%); weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 15 N/mm ² at 28days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary; laying the concrete in layers of not exceeding 15 cm thick and in bays; vibrating, compacting and finishing the surface with all leads and lifts; watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications complete as directed by the Engineer in charge of works and as per the technical specifications.	30			
a	1006.50 M ³ (One Thousand and Six point Five zero cubic metre only)	Upto 1.50m BGL to 1.00m AGL			1 M ³ (One cubic metre)	
b	99.00 M ³ (Ninety Nine cubic metre only)	From 1.00m AGL to 4.50m AGL			1 M ³ (One cubic metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
7	112.55 M ³ (One Hundred and Twelve point Five Five cubic metre only)	Providing and placing in position of plain Cement concrete of grade M15 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 20mm weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 15 N/mm ² at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary; laying the concrete in layers of not exceeding 15 cm thick and in bays; Vibrating , compacting and finishing the surface with all leads and lifts; watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications complete as directed by the Engineer in charge of works and as per the technical specifications. (with vibrating)	30		1 M ³ (One cubic metre)	
8	11.01 M ³ (Eleven point zero One cubic metre only)	Providing and placing in position of plain Cement concrete of grade M15 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 20mm weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 15 N/mm ² at 28 days) including dewatering the placement site by bailing/pumping and by diverting wherever necessary; laying the concrete in layers of not exceeding 15 cm thick and in bays; compacting and finishing the surface with all leads and lifts; watering curing complete so as to attain the profile and strength specified in the approved drawing & specifications complete as directed by the Engineer in charge of works and as per the technical specifications. (without vibrating)	30		1 M ³ (One cubic metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
9	7.80 M ³ (Seven point Eight Zero cubic metre only)	Providing and placing in position of Plain Cement Concrete of grade M 25 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 20mm; weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 25N/mm ² at 28days) including dewatering of placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers and in bays, Vibrating, compacting and finishing, adequate water curing so as to attain the profile and strength specified in the approved drawing and specifications as per the direction of the Engineer complete in all respect but excluding the cost and placing of reinforced grill in position etc, complete as directed by the Engineer in charge of works and as per the technical specifications	30		1 M ³ (One cubic metre)	
10	41.70 M ³ (Forty One point Seven Zero cubic metre only)	Providing and placing in position of Reinforced Cement Concrete of grade M 20 using hard well graded aggregates with the nominal maximum size of coarse aggregate of 20mm; weigh batching the ingredients and mixing in approved mixers/batching plant (to produce concrete of the specified characteristic strength of 20N/mm ² at 28days) including dewatering of placement site by bailing/pumping and by diverting wherever necessary laying the concrete in layers and in bays, Vibrating, compacting and finishing, adequate water curing so as to attain the profile and strength specified in the approved drawing and specifications as per the direction of the Engineer complete in all respect but excluding the cost and placing of reinforced grill in position etc, complete as directed by the Engineer in charge of works and as per the technical specifications	30		1 M ³ (One cubic metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
11		Supplying and Erecting water tight steel centering for sides and soffits including necessary supports and shuttering including strutting for all R.C.C. works etc up to 3.29 m height with all cross bracings using mild steel BG 10 sheets of size 90cm x 60cm gauge stiffened with welded mild steel angles of size 25x25x3mm for boarding laid over silver oak (country wood) joist of size 10cm x 6.5cm spaced at about 90cm centre to centre and suitably supported by casuarina props of 10cm to 13cm dia spaced at 75cm centre to centre, including cost of materials etc., complete complying with standard specification and as directed by the Departmental officers. The payment for centering shall be given after the concrete is laid and the retrieved materials should be taken back by the contractor.	86 & 86 A			
a	833.00 M ² (Eight Hundred and Thirty Three square metre only)	Below Ground Level (Without Strutting)			1 M ² (One square metre)	
b	1740.00 M ² (One Thousand Seven Hundred and Forty square metre only)	Above Ground Level (With Strutting)			1 M ² (One square metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
12	683.00 M ² (Six Hundred and Eighty Three square metre only)	Supplying and Erecting water tight steel centering for sides and soffits including necessary supports with all cross bracings using mild steel BG 10 gauge sheets of size 90 x 60cm gauge stiffened with welded mild steel angles of size 25x25x3mm laid over silver oak (country wood) joist of size 75 x 5cm spaced at about 9045cm c/c and supported by casurina props of 10 cm to 13 cm dia spaced at 75 cm c/c for vertical plain concrete etc., complying with standard specification and as directed by the Departmental Officers (The retrieved materials should be taken back by the contractor). The payment for centring shall be given after the concrete is laid for field bothies and flow measuring device.			1 M ² (One square metre)	
13	57.60 Qtl. (Fifty Seven point Six zero quintal only)	Supplying, fabricating and placing in position of RTS or MS reinforcement for all reinforced cement concrete works including cost of steel rods of all sizes including binding wires and labour charges for decoiling, cutting, bending and tying the grills in position etc., complete complying with standard specification and as directed by the departmental officers.	86 & 86 A		1 Qtl. (One quintal)	
14	110.00 Rm. (One Hundred and Ten Running Metre only)	Providing weep Holes with proper filter arrangements for Retaining walls using 75mm dia and 75cm to 100cm length of PVC pipe etc., complete complying with standard specification and as directed by the departmental officers.			1 RM (One Running Metre)	

Contractor

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

Sl. No.	Probable Quantity (Figures and in words)	Description of work	TNBP No.	Rate both in Figures & Words	Unit Calculation both in Figures & in words	Amount in Figures Rs.
15	10 Nos. (Ten Numbers only)	Fabricating, Supplying and erection of Screw gearing steel shutters of size 0.60x0.60m made out of 8mm thickness single side outer frame and inner cross bracing of 65x65x6mm MS angle all welded with shutter plate screw rod of 50mm diameter round welded with square thread to height of 2.50m. Top beam made out of 150mm x 75mm R.S.joists to adequate length - 2nos with necessary holes arrangements to fix the headset assembly with base, bottom nut, top cover. Nut threaded with square threaded to suit the rod thread. The sluice top open covered with framed MS sheet having locking type arrangement with stiffeners at bottom, locks etc complete. Conveying the fabricated shutter including loading, unloading and leading the shutter to the vent. Dismantling the eroded shutter and shuttering arrangements by using necessary gas cutting equipments. Erecting the new shutter and the shuttering arrangements in the vent in proper position by using necessary hoisting equipments. The shutter shall be painted with one coat of primer. The rate including cost of materials, consumables, labours, power charges, conveyance charges, charges for all equipments required conveying the dismantled materials to the section stores, cost of petty civil works, trial operation of shutter and including all taxes etc., complete. Shutter of size 0.60m x 0.60m			1 No. (One Number)	

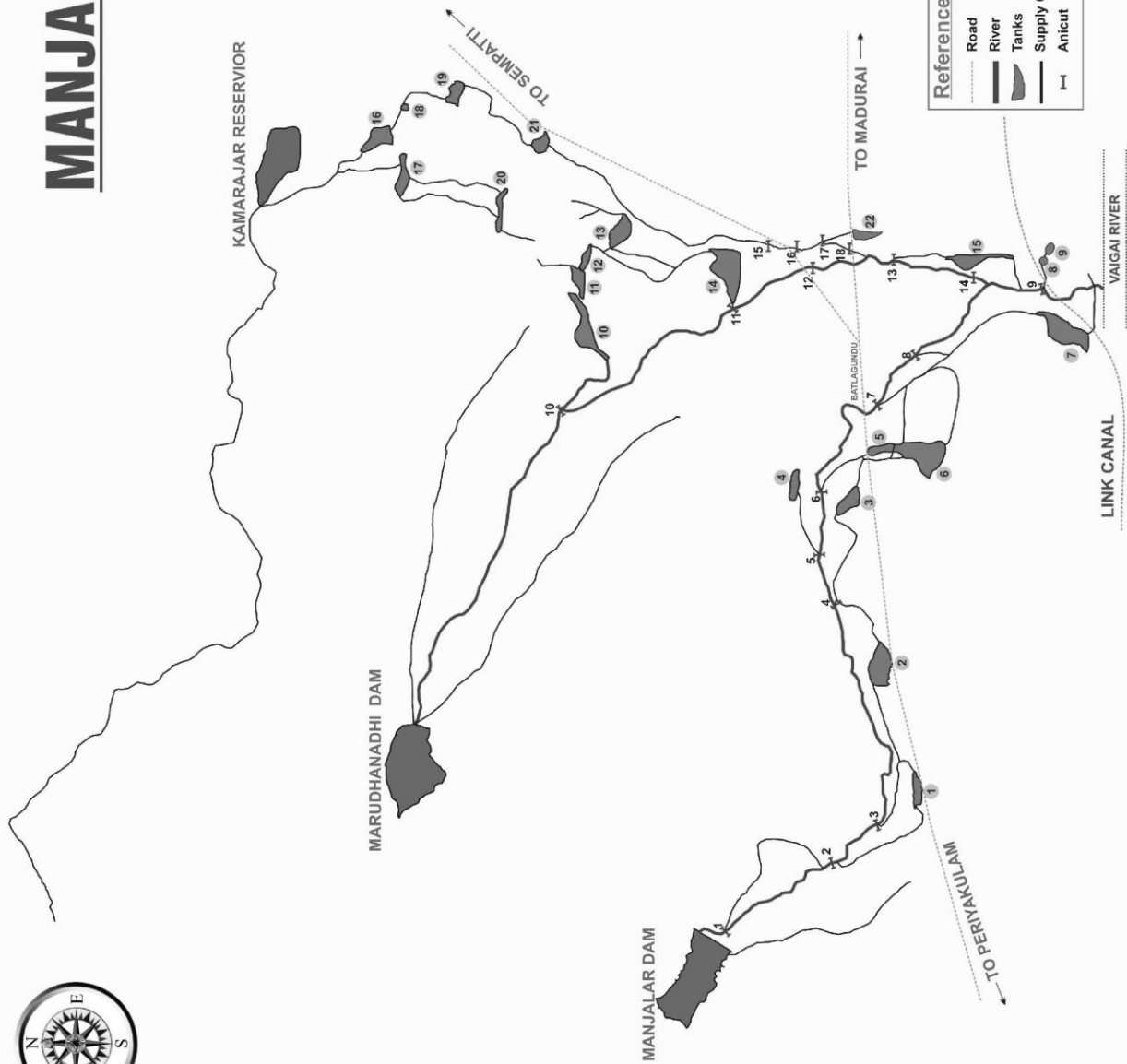
Total :- 15 (Fifteen) items only

CONTRACTOR

No. of corrections :
No. of over writings :

Superintending Engineer, WRD.,
Periyar Vaigai Basin Circle, Madurai

MANJALAR INDEX MAP



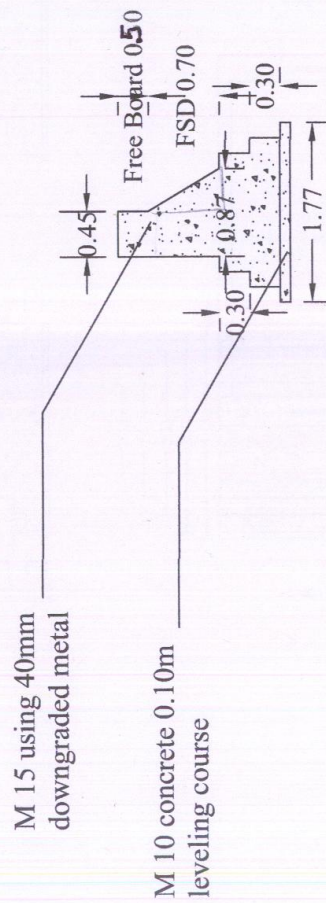
ANICUT	AVACUT (IN HECTARES)
1. NAGARVALLI ANICUT	178.21
2. MOONGIL ANICUT	74.51
3. PUDU ANICUT	114.91
4. VAIRAVAN ANICUT	127.58
5. KANAVOIPATTY ANICUT	135.68
6. PERIYAKULAM ANICUT	51.22
7. PILATHU ANICUT	48.86
8. KUNNUVARAYANKOTTAI ANICUT	106.18
9. ALANGULAM ANICUT	122.29
10. AYYAMPALAYAM ANICUT	263.56
11. PERUMAL KOVIL ANICUT	39.27
12. POOCHANDIYAMMAN KOVIL ANICUT	17.00
13. SIRUVAN KULAM ANICUT	39.68
14. PUDUR ANICUT	10.93
15. SAKKARAIYAR ANICUT	13.885
16. CINNAMANIYAN ANICUT	36.41
17. MALAYAGOUNDAN ANICUT	22.045
18. CHINNANAI ANICUT	28.865

TANK	AVACUT (IN HECTARES)
1. SENGULAM TANK	22.49
2. MATHUVAR KULAM TANK	93.09
3. VEERANKULAM TANK	67.49
4. KARUVELANGULAM TANK	8.32
5. VEDAKULAM TANK	39.33
6. PERIYAKULAM TANK	145.52
7. KUNNUVARAYANKOTTAI TANK	77.82
8. ALANGULAM TANK	23.41
9. SIRUKULAM TANK	16.3
10. THAMARAI KULAM TANK	249.80
11. KARUNGULAM TANK	144.53
12. RENGASAMUTHRAM TANK	39.68
13. CHOTTANKULAM TANK	30.77
14. GOPALASAMUTHRAM TANK	88.26
15. SIRUVANKULAM TANK	63.56
16. THAMARAI KULAM TANK	249.79
17. PULIYANKULAM TANK	19.56
18. POLASAMUTHRAM TANK	1.23
19. VADIKULAM TANK	27.33
20. ATHIKULAM TANK	67.016
21. SENGATTAN KULAM TANK	26.53
22. KANNIMAR SAMUTHRAM TANK	19.56

Reference

- Road
- River
- Tanks
- Supply Channel
- Anicut

CONSTRUCTION OF FLOOD PROTECTION WALL



All Dimensions are in Meters

Cross Section of Flood Protection wall

[Signature]
 Assistant Engineer, WRD,
 Marudhanadhi Section,
 Ayyampalayam.

[Signature]
 Assistant Executive Engineer, WRD,
 Marudhanadhi Basin Sub Division,
 Nilakottai.

CONSTRUCTION OF CULVERT

Cross Section on A-A

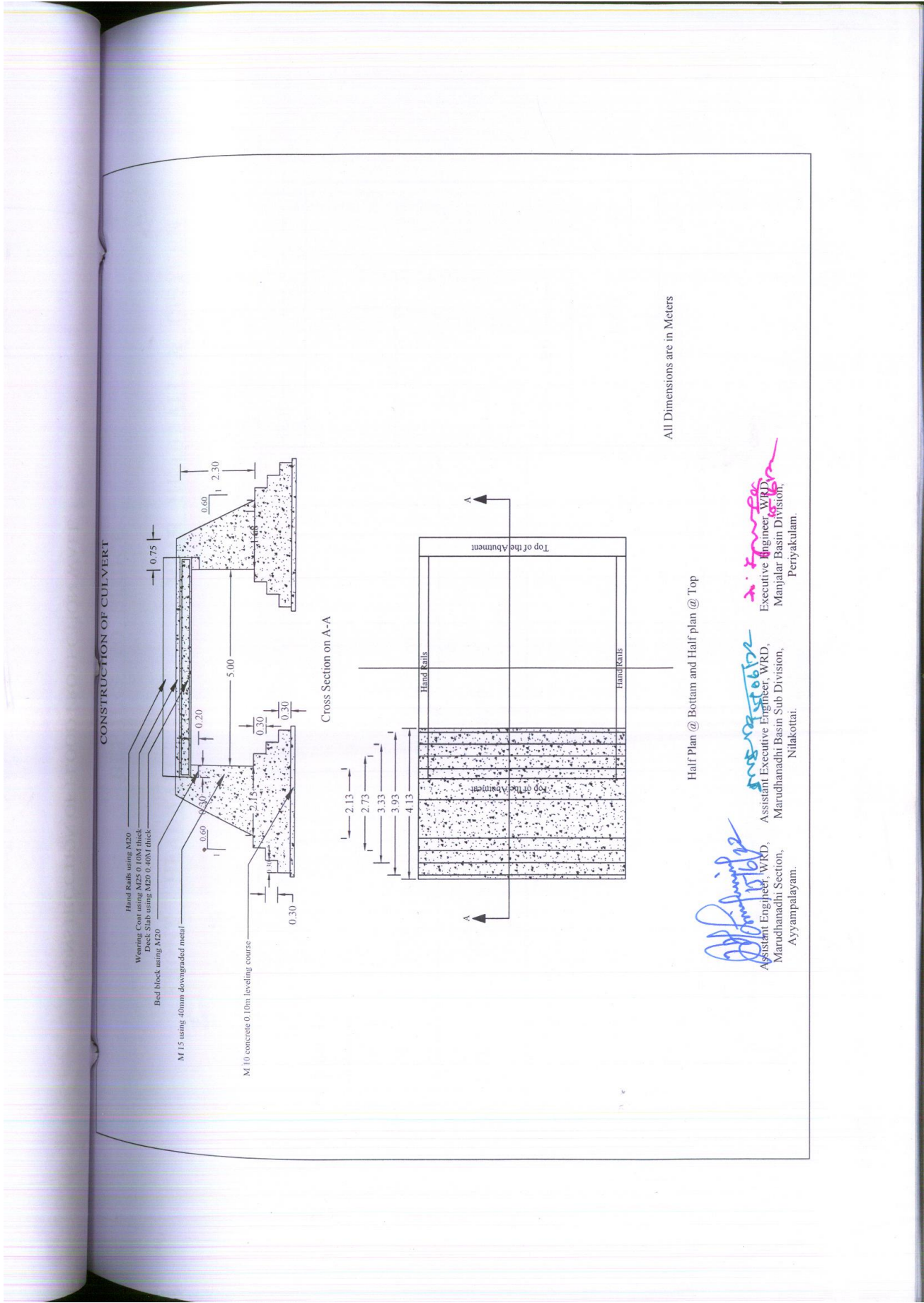
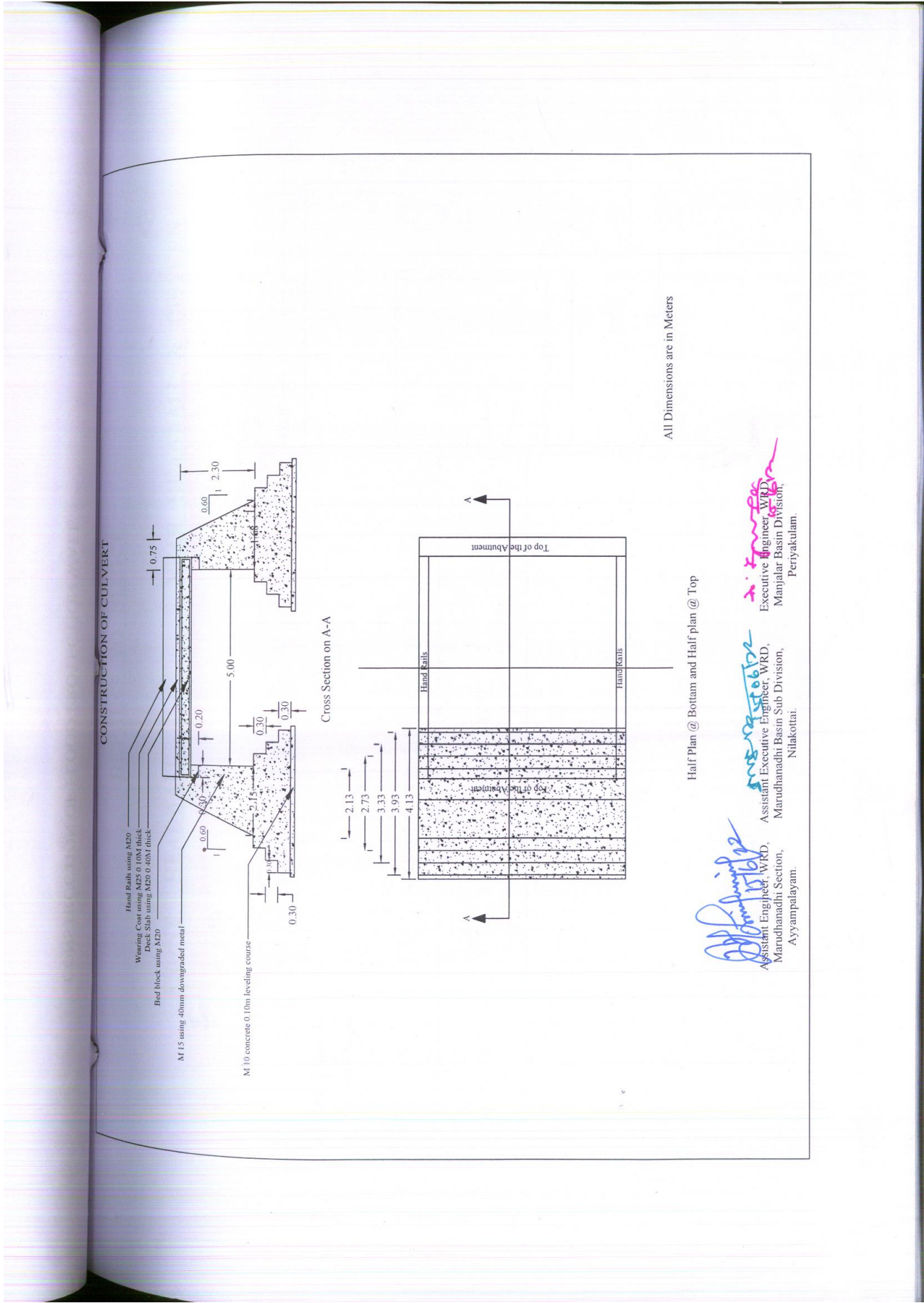
Half Plan @ Bottom and Half plan @ Top

All Dimensions are in Meters

[Signature]
 Assistant Engineer, WRD,
 Marudhanadhi Section,
 Ayyampalayam.

[Signature]
 Assistant Executive Engineer, WRD,
 Marudhanadhi Basin Sub Division,
 Nilakottai.

[Signature]
 Executive Engineer, WRD,
 Manjalar Basin Division,
 Periyakulam.

[illegible]

CONSTRUCTION OF CULVERT

Cross Section on A-A

Half Plan @ Bottom and Half plan @ Top

All Dimensions are in Meters

[Signature]
 Assistant Engineer, WRD,
 Marudhanadhi Section,
 Ayyampalayam.

[Signature]
 Assistant Executive Engineer, WRD,
 Marudhanadhi Basin Sub Division,
 Nilakottai.

[Signature]
 Executive Engineer, WRD,
 Manjalar Basin Division,
 Periyakulam.

CONSTRUCTION OF CULVERT

The diagram shows a cross-section of a culvert structure. The base layer is labeled "Bed block using M20". Above this is a layer of "M 15 using 40mm downgraded metal". The top layer is "Hand Rails using M20". Dimensions are indicated as follows: 0.60m for the bed block thickness, 0.20m for the metal layer thickness, 0.30m for the hand rail thickness, 0.30m for the concrete slab thickness, 0.60m for the concrete slab width, 0.75m for the total width at the top, and 2.30m for the total height.

Cross Section on A-A

This figure contains two diagrams: "Half Plan @ Bottom" and "Half Plan @ Top". The bottom plan shows a rectangular area with dimensions 2.13m, 2.73m, 3.33m, 3.93m, and 4.13m. The top plan shows a similar rectangular area with dimensions 2.13m, 2.73m, 3.33m, 3.93m, and 4.13m. Both plans show "Hand Rails" on either side of the central area.

Half Plan @ Bottom and Half plan @ Top

All Dimensions are in Meters

[Signature]
Assistant Engineer, WRD,
Marudhanadhi Section,
Ayyampalayam.

[Signature]
Assistant Executive Engineer, WRD,
Marudhanadhi Basin Sub Division,
Nilakottai.

[Signature]
Executive Engineer, WRD,
Manjalar Basin Division,
Periyakulam.

[illegible]

CONSTRUCTION OF CULVERT

This cross-section diagram illustrates the vertical build-up of a culvert wall. From bottom to top, the layers are:

- A base layer labeled "M 10 concrete 0.10m leveling course" with a thickness of 0.30.
- An outer layer of "Bed block using M20" with a thickness of 0.30.
- An internal layer of "M 15 using 40mm downgraded metal" with a thickness of 0.20.
- A "Wearing Coat using M25 0.10M thick".
- "Deck Slabs using M20 0.40M thick".
- "Hand Rails using M20" at the very top.

The total height from the leveling course to the top of the hand rail is indicated as 5.00. Slopes are shown on both sides with a ratio of 1 horizontal to 0.60 vertical. The width of the top slab is 0.75, and the base width is 2.30.

Cross Section on A-A

This plan view shows the horizontal dimensions of the culvert. It features two main sections separated by a centerline:

- Left Side (Bottom View):** Shows a series of parallel lines representing the culvert's profile. Dimensions from the centerline outwards are: 2.13, 2.73, 3.33, 3.93, and 4.13.
- Right Side (Top View):** Shows the top of the abutment and hand rails. Labels include "Top of the Abutment" and "Hand Rails".

Arrows labeled 'A' indicate the direction of the cross-section line A-A.

Half Plan @ Bottom and Half plan @ Top

All Dimensions are in Meters

[Signature]
Assistant Engineer, WRD,
Marudhanadhi Section,
Ayyampalayam.

[Signature]
Assistant Executive Engineer, WRD,
Marudhanadhi Basin Sub Division,
Nilakottai.

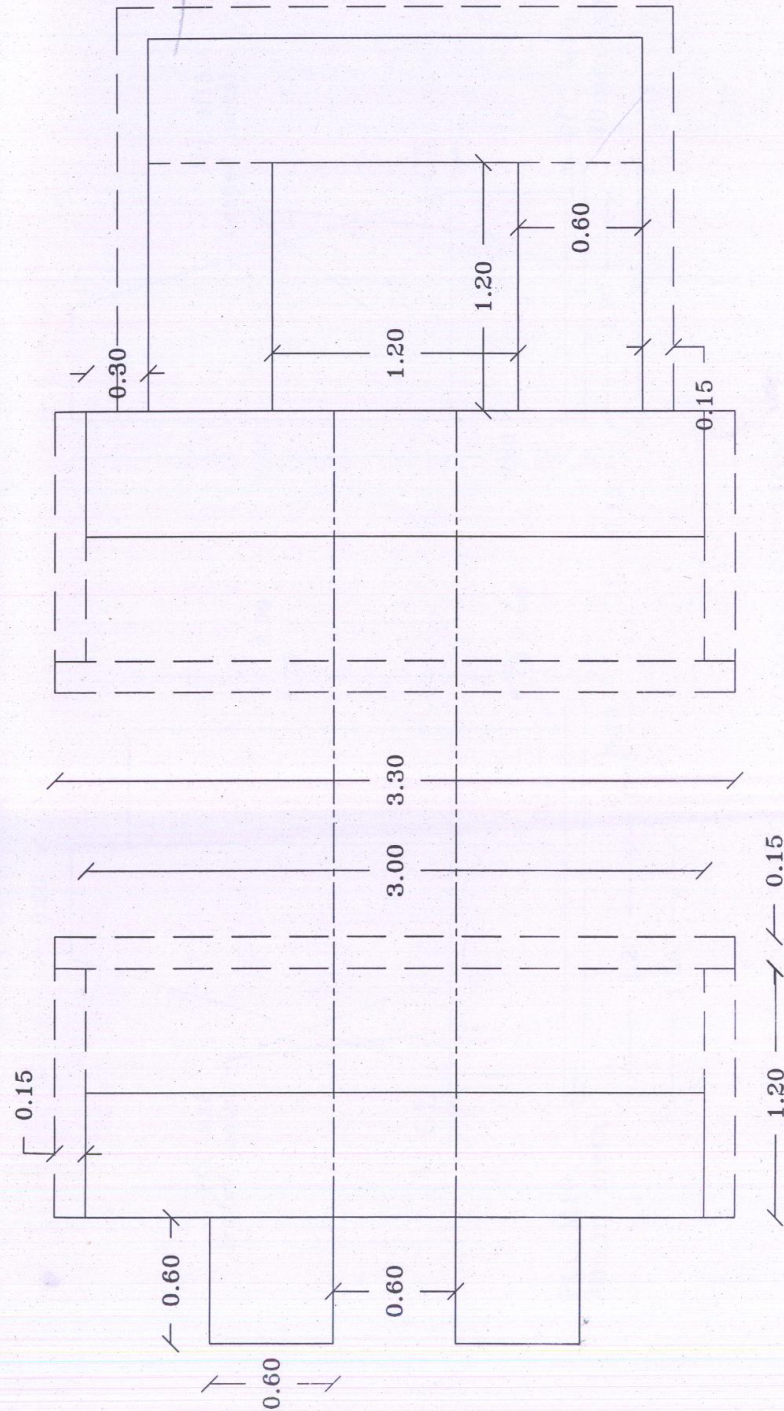
[Signature]
Executive Engineer, WRD,
Manjalar Basin Division,
Periyakulam.

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REPAIRS TO SLUICE

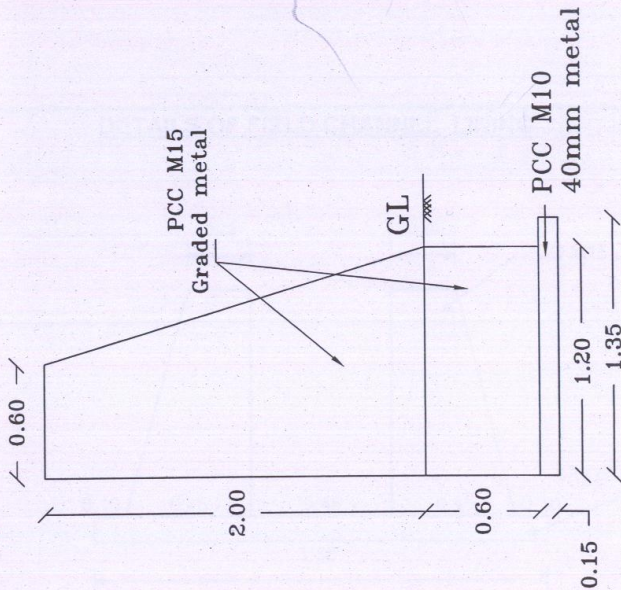
FRONT HEADWALL

REAR HEADWALL & CISTERN

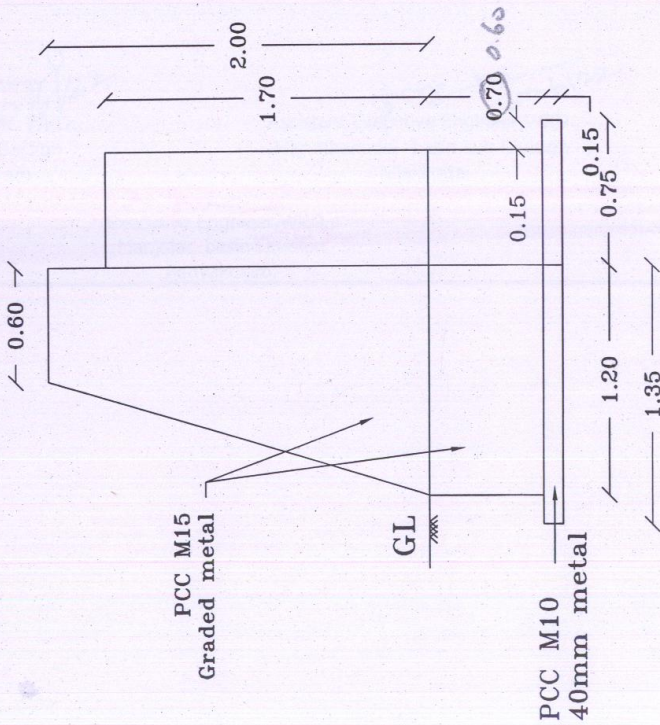


PLAN

REAR HEADWALL

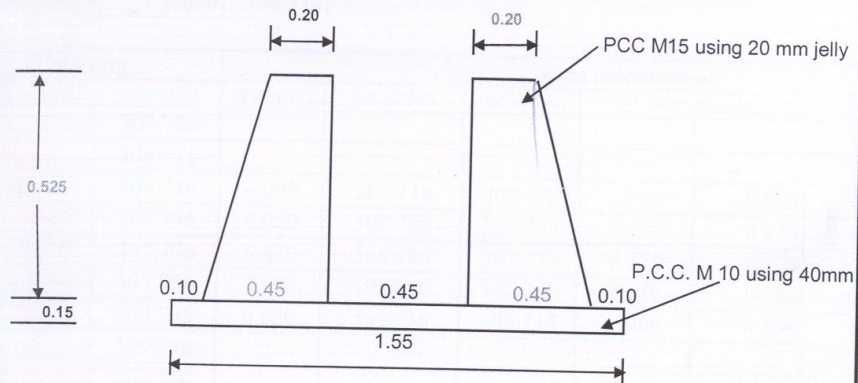


FRONT HEADWALL & GUIDE WALL



CROSS SECTION

DETAILS OF FIELD CHANNEL LINING



[Signature]
 Assistant Engineer, WRD.,
 Marudhanadhi Section
 Ayyanpalayam

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 Assistant Executive Engineer, WRD.,
 Marudhanadhi basin sub Division
 Nilakkottai

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 Executive Engineer, WRD.,
 Manjalar basin Division
 Periyakulam.