

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD

TENDER DOCUMENTS

- 1) Tender Notice No.: 10-11/ F.GEO-PHYSICAL SURVEY/ JDO/ 2022/ Dt:04.03.2022.
- 2) Name of work **Surveying and leveling by Total Station Method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX- Internal Transmission Main in Reddiyarchatram Union)**
- 3) Eligible class of contractor **Class III Civil contractor and above** registered in TWAD Board / any other state or Central Government Department / Undertakings.
- 4) Amount of EMD **Rs. 20,000/- (Rupees Twenty thousand only)** in favour of Executive Engineer, TWAD Board, RWS Division, Dindigul.
- 5) Last date for submission of tender Up to 3.00 PM on 23.03.2022.
- 6) Date and time of opening of tender At 3.30 PM on 23.03.2022
- 7) Tender should be valid for 90 Days

Receipt No : -

Date : -

Issued to

TENDERER

Sd/-
EXECUTIVE ENGINEER, TWAD BOARD,
RWS DIVISION, DINDIGUL

CONSENT LETTER

I agree to abide by all the detailed specifications, terms and conditions stipulated in the TWAD Board Manuals which I have read and understood.

SIGNATURE OF TENDERER.

TENDERER

Sd/-
EXECUTIVE ENGINEER, TWAD BOARD,
RWS DIVISION, DINDIGUL

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD
LETTER OF TENDER

To

Dated:

The Executive Engineer,
TWAD Board,
RWS Division,
Dindigul.

Sir,

1. I/We do hereby tender and if this tender be accepted undertake to execute the works covered as shown in the drawings and described in the specifications deposited in the office of the Executive Engineer, TWAD Board, RWS Division, Dindigul with such variations by way of alterations or additions to and omission from the said works and in accordance with the Detailed standard specifications and General Conditions of Contract stipulated in the TWAD Board Manuals for Rural Water Supply Schemes at % Excess/Less over the department value of Rs (Rupees) or such other sums as may be arrived at under the clause of the standard contract terms and conditions of TWAD Board relating to payment by final measurements at unit prices.

2. I/We have also quoted the tender premium in the bill of quantities (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/our tender. I/We have carefully followed the instructions, in the tender and have read, the Tamil Nadu Building Practice the general conditions to contract there in and the standard contract terms and conditions of TWAD Board and I/We have made such examination of the contract documents and of the plan, specifications, quantities and of the location where the said work is to be done and such investigation of the work required to be done and in regard to the materials required to be furnished as to enable me/us to thoroughly understand the intention of same and the requirements, 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 TWAD Board upon or arising out of any alleged misunderstanding of

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RWS DIVISION, DINDIGUL

Misconception of mistake on my/our own part of the said requirements, covenants, stipulations, restrictions and conditions.

4. I/We enclose and Income Tax verification Certificate and Sales Tax clearance Certificate.

5.**(a) I/We enclose..... the sum of Rs..... (Rupees..... in the form of as prescribed in the Tender Notice towards Earnest Money not to bear any interest.

^^ (b) I/We hereby enclose the, proof of authority vide exempting me/us from the payment of E.M.D.

Note: ** to be scored out if no applicable.

6. If my/our tender is not accepted, the E.M.D shall be returned to me/us on my/our application when intimation is sent to me/us of rejection. If my/our tender is accepted I/We do hereby agree to produce the Security Deposit in the manner and form prescribed under clause 39 in the notice inviting tender (Section I) of standard contract terms and conditions, for the due fulfillment of contract, if upon intimation being given to me/us by the tender accepting authority of acceptance of tender.

I/We fail to make the additional security deposit then, I/We agree to the forfeiture of the earnest money deposit. Any notice, required to be served on me/us hereunder shall be sufficient service on me/us if delivered to me/us personally or forwarded to me/us by post (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.

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RWS DIVISION, DINDIGUL

7. I/We fully understand that on receipt of communications of acceptance of tender from the accepting authority, there emerges a valid contract between me/us and the TWAD Board represented by the officer accepting agreement and TWAD Board Manual for Detailed Standard Specifications and General Conditions of contractor and the Tender documents issued by the Board, i.e. Tender notice. Tender with schedules, General conditions to the contract and special conditions of tender, negotiation letters, communication 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 of the tender notice, provided that, it shall be upon to the acceptance authority to insist on execution of my written agreement by tenderer, if administratively considered necessary or expedient.

8. I/We have also carefully examined the standard contract terms and conditions of the TWAD Board and Tamil Nadu Building Practice in acknowledgement of being bound by all conditions of the clauses of the General conditions to the contract (Section II) and all specifications to the contract (Section II) and all specifications for items of works described by specification number in bill of quantities (Schedule – A).

9. In consideration of the payment of Rs.....(Rupees.....) or such other sums as may be arrived at under the clause of the General conditions to the contract relating to payment 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 No.1 to inclusive (Schedule B) and described in the specification Schedule and to the extent of probable quantities shown (Schedule – A) with such variations by way of addition to or alterations, deductions from the said work and method of payment thereafter as are provided in the said conditions.

10. I/We agree that time shall be considered as the essence of the contract and commence the work as soon as this tender is accepted by the competent authority and to show progress as defined in the tabular statement (Schedule – C) “Rate of Progress”,

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subject nevertheless to the provisions for extension of time contained in clause 55 of the General conditions to the contract.

11. I/We agree that upon the standard contract terms and conditions of this contract being fulfilled and performed to the satisfaction of the Executive Engineer, the Security deposited by me/us as herein before recited or such portion thereof as I/We may be entitled to under the said conditions be paid back to me/us provided in clauses 8 of the Special conditions to the contract.

12. The term Executive Engineer in the said condition shall mean the Executive Engineer, TWAD Board in charge of the Division having jurisdiction for the time being over the work, who shall be competent to exercise all the powers and privileges reserved therein favour of the TWAD Board who has been duly authorized by the TWAD Board.

13. I am / we are professionally qualified and my/our qualifications are follows

.....

I/We in pursuance of schedule undertake to employ the following technical staff our supervising the work and will, see that one of them is always at site during working hours personally checking all items of works paying extra attention to such work as may require special attention.

e.g reinforced cement concrete etc.,

Sl No.	Name of Technical Proposed to be employed	Qualification	Experience
1.			
2.			
3.			

14. I/We agree in the event of any dispute arising between the parties hereto in respect of any of the matter comprised in this contract, the same shall be settled by a competent court having jurisdiction, over the place where the contract is awarded and agreement is concluded and by no other court.

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RWS DIVISION, DINDIGUL

15. I/We undertake to assume full responsibility for the stability and soundness of the works/structures that will be executed by me/us per this contract.

16. I/We undertake and agree that I/We will not withdraw this tender during the period of validity of my/our tender as indicated in my/our tender and also during such extended period as agreed to by me/us such period to date from the last date by which tenders are due to be submitted and if I/We do so withdraw, I/We agree to forfeit the EMD to the TWAD Board.

17. I/We understand that the Board is not bound to accept the lowest or any tender the Board may receive.

Dated this day of

Signature of Tenderer

Address:

TENDERER

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EXECUTIVE ENGINEER, TWAD BOARD,
RWS DIVISION, DINDIGUL

INSTRUCTIONS TO BIDDERS

- 8) **Description of works:** Surveying and leveling by Total Station Method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX-Internal Transmission Main in Reddiyarchatram Union)

1. The Tenderer is required to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the tender documents and in the TWAD Board manual for Rural Water Supply Schemes – Detailed Standard specifications and General conditions of contract. Failure to comply with the requirements of bid will be at tenderers' own risk. Tenders which are not responsive to the requirements of the tender documents are liable to be rejected.

2. Qualification Criteria:

The Bidder should have registered as **Class III Civil contractor or above** in TWAD Board / any other state or Central Government Department / Undertaking. Bidder who is not registered in the TWAD Board should get registered his name in the appropriate class of registration before conclusion of Agreement in the event of his tender is accepted. **The bidder must have successfully completed 50% of the Tendered Quantity within Last one year before this tender date and also minimum 3 years experience in Surveying and Leveling work using Total Station in TWAD Board/ Central / State Government Department / Government Organizations/ Government undertakings. Necessary experience certificates from the competent authority not less than the rank of Executive Engineer should be enclosed along with the tender documents failing which the Tender will summarily be rejected.**

3. Method of Tendering:

If the tender is made by an individual, the tender documents shall be signed by the individual with his name and address.

If the tender is made by a registered firm, it shall be signed by the Managing Partner with full name of the firm and address.

If the tender is made by a limited company or a limited corporation, it shall be signed by a duly authorized person holding the power of attorney for signing the tender in which case a certified copy of the power of attorney shall accompany the tender. Such limited company or corporation may be required to furnish satisfactory evidence of its existence before the contract is awarded.

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4. The bids from the contractors/firms shall be accompanied by an attested copy of the valid Income Tax clearance certificate and latest GST verification Certificate if the firm / contractor is not liable to the GST Department, the firm/ contractor should produce a valid certificate issued by the competent authority to this effect.
5. The Bidder is expected to examine carefully all instructions, conditions, forms, terms specifications and drawing in the bidding documents. Failure to comply with the requirements of bid submission will be at bidder's own risk. Bids which are not substantively responsive to requirements of the bidding documents are liable to be rejected.

6. Amendment of Bidding documents:

At any time prior to the deadline for submission of bids, the employer may for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by the issuance of any addendum / corrigendum.

The Addendum/Corrigendum will be sent in writing or by cable to all prospective bidders who have purchased the bidding documents and will be binding upon them. Prospective bidders shall promptly acknowledge the receipt of the communication thereof to the Employer. In order to afford prospective bidders reasonable time in which to take an addendum/corrigendum into account in preparing their bids, the Employer may at his discretion, extend the deadline for the submission of the bids.

7. Language of Bid

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the bidder and the employer shall be written in English/Tamil Language.

8. Document Comprising the Bid

The bid to be prepared by the bidder shall comprise the entire documents in full, say the Tender documents and Appendix thereto, the Earnest Money Deposit, the Bill of Quantities and the rates thereof, the schedules of supplementary information, the information on eligibility criteria supported by relevant documentary evidence and any other material required to be completed and submitted in accordance with the instructions of Bidders embodied in these bidding documents. The forms, Bill of Quantities and schedules shall be used without exception subject to extension of the schedule in the same format.

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9. Prices:

The prices offered by the contractor shall remain firm for the entire project period and no variation in price shall be allowed on any account.

10. Bid Validity:

The bids shall remain valid and open for acceptance for a period of 90 days after the date of opening of the Tender. In exceptional circumstances prior to expiry of the original validity period, the employer request the bidder for a specified extension of the period of validity. The request & response thereto shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. The bidder agreeing of the request will not be permitted to modify his bid, but will be required to extend the validity of his bid security accordingly. The provisions regarding discharge and forfeiture of bid security shall continue to apply during the extended period bid validity.

11. Bid Security (Earnest Money Deposit) :

The bidder shall furnish as part of his bid, and Earnest Money Deposit of **Rs. 20,000/- (Rupees Twenty thousand only)** in any one of the following forms duly pledged or drawn in favour of the Executive Engineer, TWAD Board, RWS Division, Dindigul.

1. Demand draft drawn in a Nationalized Bank in favour of the Executive Engineer concerned.
2. Deposit at call receipt of Scheduled banks pledged in favour of the Executive Engineer concerned.
3. Government Security and National Saving Certificate favour of the Executive Engineer concerned.(purchased within the state of Tamilnadu)
4. Post office savings bank deposits favour of the Executive Engineer concerned.
5. Fixed deposit receipts from scheduled Bank / Nationalized Bank in favour of the Executive Engineer concerned.

Any Bid not accompanied by an acceptable form of Earnest Money Deposit will be rejected by the Engineer as non-responsive.

The Earnest Money Deposit of unsuccessful bidders will be returned without any interest within 15 days after a decision is taken on the tender.

12. Signing of Bids:

The original bid shall be filled by typing or by writing in indelible ink and shall be signed by the authorized signatory to bind the bidder to the contract. Proof of authorization shall be furnished in the form of Power of Attorney duly signed executed and this should accompany the bid. All pages of the bid shall be signed and wherever entries or amendments as directed by the Employer are made, they should be properly attested by the signatory to the bid.

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The complete bid shall be free of alternations, interlineations or erasures, except those that were instructed to be carried out by the Employer. In case, necessity arose to correct the errors committed by the bidder, the same shall be properly attested by the signatory to the bid.

Each bidder is entitled to submit only one bid no bidder will have the option of participating more than one bid for this contract.

13. Deadline for submission of Bids.

The Tender shall be received by the Executive Engineer, at his office at **TWAD Board, RWS Division, Dindigul** not later than **3.00 PM on 23.03.2022**. The Executive Engineer may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with clause 6 above, in which case all rights and obligations of the Executive Engineer and the Bidders and the Bidders previously subject to the original deadline shall thereafter be subject to the original deadline shall thereafter be subject to the new deadline as extended.

14. Mode of submission of Bid Documents:

The bid documents are to be delivered either by hand or by registered mail in the following address before the expiry of the deadline fixed for submission of bid documents.

The Executive Engineer, TWAD Board, RWS Division, Dindigul.

.....
.....

.....TWAD Board under no circumstances shall be responsible for the delay or loss or damage to the Bid Documents in transit.

15. Late Bids:

Any bids received by the Executive Engineer, after the deadline for submission of bids prescribed in accordance with clause 13 above, will not be considered and the same will be returned to the Bidder unopened.

16. Bid Opening:

The tender will be opened by the Executive Engineer **at 3.30 PM on 23.03.2022** in the premises of the office of the Executive Engineer, TWAD Board, RWS Division, Dindigul. The bidders of their authorized representative desirous of attending opening of the bids may do so with proper authorization to represent.

The Engineer will examine the bids to determine whether the documents are complete. Whether the requisite Earnest Money Deposit has been remitted to the required value and in the manner prescribed whether the documents have been properly signed/attested

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and ascertain whether the bids are generally in order. During the opening of bids, the Executive Engineer will announce the names of the bidders, written notification of bid modifications if any, the compliance with reference to the remittance of Earnest Money Deposit and such other details as the Employer may consider appropriate.

17. Clarification of Bids:

For any clarifications in the bid and for negotiations the bidder shall attend the office of the **Executive Engineer, TWAD Board, RWS Division, Dindigul** whenever he is called upon to do so.

18. Responsiveness of the Bids:

The bids shall be treated as substantively responsive based on the satisfaction of the required capacity, capability and financial resources. For this purpose, the bid should conform to all terms, conditions and specification of the bidding documents without deviation or reservation. The Executive Engineer reserves the right to determine and evaluate the bids with regard to their response substantively. If a bid in the opinion of the Executive Engineer is found to be substantially not responsive, the Executive Engineer reserves the right to reject that bid and may not subsequently be made responsive by the bidder by carrying out corrections or withdrawal of the non/conforming deviation or reservation. However, the decision of the employer shall be final and binding in all these matters.

19. Evaluation and comparison of Bids:

The Executive Engineer will evaluate and compare only the bids which are determined to be substantively responsive with reference to the requirements and parameters fixed for qualification. In addition to the prices offered by the bidders in the price bid, will take into account the arithmetic errors corrected as defined in clause 18 above.

20. Right to accept or reject the Bids:

The Executive Engineer reserves the right to accept or reject any or all the bids without assigning any reasons therefore. Under such circumstances, the Executive Engineer will neither be under any obligation to inform the bidder or the bidders of the grounds for the action of the Executive Engineer nor will be responsible for any liability incurred by the bidder on this account.

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21. Notification of Award:

The Engineer will promptly inform the successful bidder of the award of the contract before the expiry of the validity period and in the case of extended periods, before the expiry of the extended periods. The award of contract will be in Writing and in the event of award of contract being informed through cable, the same shall be confirmed through a written communication by the Executive Engineer. The award of contract shall be in the form of work order and shall bear the details of prices at which the Executive Engineer has accepted the works to be executed. The notification of the award will constitute the formation of the contract.

22. Security Deposit and Agreement:

The successful bidder on getting the work order from the Executive Engineer shall remit the Security Deposit **AS PER B.P.Ms.No.03/ COM Wing / Dated 28.01.2015** in the form of Government Security and National Saving Certificate (purchased within the state of Tamilnadu), Post office savings bank deposits, Fixed deposit receipts from scheduled Bank pledged in favour of the Executive Engineer, TWAD Board, RWS Division, Dindigul within 15 days from the date of work order and promptly enter into an agreement with the Executive Engineer in the forms specified for this purpose. The agreement should be executed within 15 days from the date of work order in the non-judicial stamp paper of value not less than Rs.100 purchased in the name of the contract at his cost. The remittance of the required Security Deposit in the proper form and the conclusion of agreement shall constitute the formal fulfillment of the contract.

B.P. Ms.No.03/ COM Wing / DATED 28.01.2015.

a.	For tenders with any plus % & up to minus 5% of Dept. value	2% of Contract value
b.	For tenders with minus 5% & up to minus 15% of Dept. value	4% of Contract value
c.	For tenders with more than minus 15% of Dept. value	5% of Contract value

23. Forfeiture of Earnest Money Deposit:

In the event of the successful bidder, upon receipt of work order should respond with the remittance of Security Deposit and execution of the agreement within 15 days from the date of work order, failure of which will be liable for the forfeiture of the Earnest Money Deposit remitted by the bidder along with the bid documents.

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PRICE BID

1. Bill of quantities shall be read in conjunction with the instructions to bidders and TWAD Board manual for Rural Water Supply Schemes – Detailed Standard Specifications and General Conditions of Contract and Drawings.
2. The quantities given in the bill of quantities are estimated and provisional and are given to provide a common basis for bidding. The basis of payment will be actual quantities of work ordered and carried out, as measured by the Engineer and agreed by the contractor and valued at the rate and prices tendered in the priced bill of quantities, where applicable, and otherwise at such rates and price as the Engineer may fix within the terms of the contract.
3. The rates and prices tendered in the prices bill of quantities shall, except in so far as it is otherwise provided under the contract, include all constructional plant, labour supervision materials, erection, maintenance, insurance profit, taxes and duties together with all general risks, liabilities and obligations set out or implied in the contract.
4. All pages in the BOQ should be signed without omission.
5. All corrections / over writings should be properly attested by the bidder.
6. The total amount arrived based on the excess/less quoted in the “Abstract of BOQ” will only be taken as final value for comparison and finalization of the Tender.
7. If there is any variation in the percentage quoted in words and figures, the lesser of the two will only be taken into consideration.
8. The Percentage quoted in the bid should be up to two decimal only.
9. If the tenderer failed to score out the word either of “Excess” or “Less” the word less along will be taken into consideration.

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SCHEDULE - 'A'

- 9) Name of Work: Surveying and leveling by Total Station Method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX-Internal Transmission Main in Reddiyarchatram Union)

Sl. No.	Description of item of work	Quantity		Specification	Unit	Rate in		Amount Rs.
						Figures	words	
1	Surveying and levelling for the proposed alignment of pipe line by Total station method by engaging qualified Engineers with minimum qualification of B.E.(Civil), Technical Assistant Grade I & II and Mazdoor category I, using the contractor own survey instruments, Special tools and plants vehicle hire charges, transportation, initial incidental charges such as jungle clearance etc. Preparation of Tree map and alignment plan, duly incorporating salient details, such as topographical features, permanent land marks, bench marks etc. at appropriate points, alignment plans and longitudinal section plan at 30 m intervals in addition to other salient locations such as branches, bends, culverts, river crossing etc., with all field particulars in Auto Cad and submission of plan 3 set, along with LF books with making all entries with certification by above qualified Engineers with soft copy and marking TBM stones at required places with bench mark registers soft copies 3 set and hard copy 5 set etc., complete as directed by TWAD Board officers.							
	Reddiarchatram Union Sump to Panchayat Sumps and Habitations	444	KM	TWAD SOR 2022 P 294	per Km	3950.00	Rupees Three Thousand Nine Hundred & Fifty Only	1753800.00
Sub Total								1753800.00
GST - 18%								315684.00
Grand Total								2069484.00
Rupees Twenty Lakh Sixty Nine Thousand Four Hundred and Eighty Four only								

I/We Agree to execute the above work at% (figure).....(words)

Excess/Less than the Departmental value mentioned above (The percentage should be mentioned both in figure and words)

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EXECUTIVE ENGINEER/TWAD BOARD

SCHEDULE - A

GENERAL ABSTRACT OF B.O.Q

- 10) Name of Work: Surveying and leveling by Total Station Method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX-Internal Transmission Main in Reddiyarchatram Union)

SI No.	Name of component	Quantity	Ref.to Manual	Departmental Value (Rs.)
	SEPARATE SHEET ENCLOSED.			

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RWS DIVISION, DINDIGUL

SCHEDULE – B

LIST OF DRAWINGS.

- 11) Name of Work: Surveying and leveling by Total Station Method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX-Internal Transmission Main in Reddiarchatram Union)

Sl. No.	Drawing No.	Description.
	DRAWINGS ARE AVAILABLE AT TWAD BOARD, RWS. SUB DIVISION, VADAMADURAI	

Note : - All drawings to be signed by the contractors as well as by officers entering into contact.

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RWS DIVISION, DINDIGUL

SCHEDULE – C .

RATE OF PROGRESS.

The fifteenth day from the date of issue of work order shall be reckoned as the start date of contract period.

The date of acceptance of agreement:

The date of handing over the site:

The entire project must be completed in all respects.

The rate of progress for each component covered in the contract shall be as in the following schedule.

Name of component	Period for Execution	Completion in term of Percentage.
Surveying and levelling by Total Station method for CWSS to 1951 Habitations in 7 Unions & 10 TPs in Dindigul District under MVS through JJM with River Cauvery as Source (Pkg IX-Internal Transmission Main in Reddiyarchatram Union)	90 days	100% (All works including submission of completed drawings and all data both hard and soft copies)

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RWS DIVISION, DINDIGUL

TECHNICAL STAFF TO BE EMPLOYED

The contractor shall employ the following technical staff as per the prescribed rules.

Name of the member of Technical staff :
to be employed.

Qualification:

The details of value, scale and minimum qualification prescribed for the employment to technical staff, the rate of penalty for the failure on the part of the contractor to employ the technical staff for the work etc., are as follows:-

Sl.No.	Value contract	Scale & Minimum qualification prescribed for the employment of technical staff	Rate of penalty
1)	Above Rs.1.00 lakh & up to Rs.5.00 lakhs	One Engineer with Diploma in Civil/ Mech. Engg.	Rs.2000/- per month
2)	Above Rs.5.00 lakhs & up to Rs.10.00 lakhs	One Engineer with Degree in Civil/ Mech. Engg. with Minimum 1 year experience	Rs.5000/- per month
3)	Above Rs.10.00 lakhs & up to Rs.25.00 lakhs	One Engineer with Degree in Civil/ Mech. Engg. with 3 years experience	Rs.6000/- per month
4)	Above Rs.25.00 lakhs	One Engineer with Degree in Civil/ Mech. Engg. with 3 year experience and one Engineer with Diploma in Civil/ Mech. Engg.	Rs.8000/- per month (Degree: Rs.6000/- Diploma: Rs.2000/-)

If the contractor fails to employ the technical staff the departmental requirements, the contractor is liable to pay the penalty as indicated above during the period of such non employment of technical staff.

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RWS DIVISION, DINDIGUL

ANNEXURE IX

Technical Staff to be employed

I/We shall/Will employ the following technical staff as per the prescribed rules

Sl. No	Name of the technical staff to be employed	Designation	Qualification

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RWS DIVISION, DINDIGUL

1. Programme Schedule/Rate of Progress/ Milestone

The Contractor, within seven days from the date of signing of the agreement, shall submit to the Engineer for approval a Programme showing the general methods, arrangements, order, and timing for all the activities in the works.

An update of the Programme shall be a Programme showing the actual progress achieved on each activity and the progress to be achieved on the remaining work including any changes to the sequence of activities. The Contractor shall submit to the Engineer in charge, for approval, an updated Programme. The Employer reserves the right to approve or reject the updated programme without prejudice to levying of penalty for slow progress

2. Penalty for Defective Surveying

If any defect is noticed by the Employer in the surveying of any portion, the Employer shall levy penalty up to 10% of the total value of the defective work as assessed by the Engineer in charge in addition to the rectification of works at his cost.

3. Penalty for Slow Progress

Provided the firm/ contractor fails to maintain the required rate of progress/ mile stones stipulated for the project as a whole or in any of the component or in the case of works not commenced, the engineer in charge shall have the right to impose penalty of such an amount as he may deem fit for every day of delay caused in the progress of the project as a whole or in part as well as for the portion of the work remaining not commenced, subject to the condition that the total penalty imposed shall not exceed 5% of the total contract value. The penalty levied on the firm/ contractor is however subject to modification at the discretion of the Chief Engineer for valid reasons which are to be recorded.

4. Procedure for Levying of Penalty

The programme schedule drawn for the project entrusted on turnkey basis, should be kept up by the firm/ contractor without any slippage. The Executive Engineer concerned shall monitor properly the execution of the work with reference to the programme schedule stipulated. The Executive Engineer, on identification of any defective construction or any slippage in the programme schedule in any of the component, shall issue a show cause notice either by RPAD or through personal service to the firm/ contractor, giving 15 days time for furnishing the reasons therefore by the firm/ contractor.

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RWS DIVISION, DINDIGUL

In cases, where the reason adduced by the firm/ contractor are not convincing, the penalty contemplated in the agreement conditions shall be invoked.

5. Liquidated Damages

Provided the firm/contractor fails to complete the work as a whole or part thereof within the stipulated period, the firm/contractor shall be liable to pay liquidated damages at 0.10% of the value of the unfinished works per week of delay till the completion of the work in full in all respects and handing over to the department. The amount recoverable towards liquidated damages shall however be restricted to 5% of the total contract value. The imposition of the liquidated damages clause will be without prejudice to the rights of the Employer to terminate the contract as time barred.

For imposing liquidated damages, detailed show cause notice shall be served on the defaulting firm/contractor either by RPAD or through personal service. The first notice shall be served allowing 15 days time to the firm/contractor for furnishing the reply by them. In the event of non-receipt of reply on expiry of 15 days time from the date of first notice, the second notice shall be served allowing 7 days of time to the firm/ contractor for furnishing the reply by them. Again in case of non receipt of reply on expiry of 7 days time from the date of second notice, the third notice shall be served allowing 3 days of time to the firm/contractor for furnishing the reply by them. On receipt of the reply, it shall be verified by the Engineer-in-charge and liquidated damages clause shall be invoked by issuing an explicit speaking order to the firm/contractor. Similarly, the non receipt of any reply from the firm/contractor shall attract imposing the liquidated damages clause automatically and in this case also, the liquidated damages shall be imposed by issuing an explicit speaking order to the firm/contractor.

6. Foreclosure of Works

The Employer shall have the right to issue notice to the firm/contractor, for any reason whatsoever does not require the whole or part of the works to be carried out after the award of the contract. The contractor shall not have any claim towards compensation or whatsoever, on account of any profit or advantage, which he might have derived from the execution of such works. For the works executed which could not be utilized in view of the foreclosure, the firm/ contractor shall be paid a eligible amount as certified by the Engineer in charge.

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GENERAL CONDITIONS OF CONTRACT

1. Definitions

In the contract (as hereinafter defined) the following words and expressions shall have its meanings hereby assigned to them, except where the context otherwise requires :

“Board” means the Tamil Nadu Water Supply and Drainage Board, a statutory body constituted under the Tamil Nadu Water Supply and Drainage Board Act 1971 having its office at No. 31, Kamarajar salai, Chepauk, Chennai – 600 005 and any officer authorized to act on its behalf.

“Employer” means the Tamil Nadu Water Supply and Drainage Board and shall include the officers duly authorized to act on its behalf.

“Contractor” means the person or persons, firm or company whose tender has been accepted by the Employer and includes the authorized representatives, successors, heirs, executors, administrators.

“Engineer” means the Executive Engineer or any other Engineer appointed from time to time by the Employer to act as Engineer for the purposes of the works brought under this contract. “Engineer-in-charge” means the Executive Engineer or any other Engineer authorized by him.

“Engineer’s representative” means any Resident Engineer or assistant of the Engineer or any clerk of works appointed from time to time by the Employer or/ the Engineer to perform the duties set forth in respect of this Contract.

“Contract” means the Invitation for Bids and amendment made thereof, Letter of Acceptance, the formal Agreement executed between the Employer and the Contractor together with the documents referred to therein, General Conditions of the Contract, Special Conditions, Specifications, Minutes of the pre Bid conference, Design, Drawings, Schedule of Rates and Prices, Bill of quantities, Rate of Progress etc. All these documents taken together shall be deemed to form one contract and shall be complementary to one another.

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“Contract Price” means the sum stated in the Letter of Acceptance subject to such additions thereto or deductions there from as may be provided under this Contract.

“I.S.S.” means Indian Standard Specification.

“B.I.S.” means Bureau of Indian Standards

“TNBP” means Tamil Nadu Building Practice

“Day” means a calendar day (from midnight to midnight)

“Week” means seven consecutive days.

“Month” means from the beginning date of a given date of a calendar month to the end of the preceding date of the next calendar month.

“Rupees” means Rupees in Indian Currency.

“Bill of Quantities” means the priced and completed bill of quantities forming part of the tender.

“Tender” means the Contractor’s priced offer to the Employer for the execution, completion and maintenance of the Works and remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.

“Letter of Acceptance” means the formal acceptance by the Employer of the Tender.

“Contract Agreement” means the contract agreement referred to in clause

“Appendix to Tender” means the appendix comprised in the form of Tender annexed to these conditions.

“Commencement Date” means the fifteenth day from the date of issue of work order and this shall be reckoned as the start date of the project.

“Time of Completion” means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract (or as extended under clause....) calculated from the Commencement Date.

2. LANGUAGE OF THE CONTRACT

The contract document shall be drawn up in the English language and executed at Dindigul

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3. DOCUMENTS MUTUALLY EXPLANATORY

The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the Contractor instructions thereon and in such event, unless otherwise provided in the contract.

4. SUBLETING OF CONTRACT

Assignment of the contract is not permissible. Transfer of the contract is not permissible on any grounds. The contractor shall sublet any portion of the contract only with the written consent of the Engineer in charge. It should be clearly understood that any subletting shall in no way absolve the contractor of his responsibilities and obligations under this contract.

5. TOOLS AND PLANT

All tools, plants and equipments required for this contract will be arranged by the contractor at his own expense. The Contractor shall erect necessary construction plant as may be necessary and shall use such methods and appliances for the proper performance of all the operations connected with the work brought under the contract ensuring satisfactory quality of work and maintenance of the programme schedule. The non availability of any tool, plant or equipment shall not be relied upon as a reason for non functioning or slow progress

6. GENERAL RESPONSIBILITIES AND OBLIGATIONS OF THE CONTRACTOR

The contractor shall promptly inform the Employer and the Engineer in charge if any error omission, fault and other defects in the specification or design of the works which are identified at the time of reviewing the contract documents or during the execution for proper rectification thereof.

All notices, certificates connected with the work served by the employer relating to the contract shall be sent by post or by hand to the contractor's principal place of business as mentioned in the document or at other places as may be nominated by the contractor in writing for this purpose. Any change in the address of the contractor should be promptly intimated to the Employer in writing then and there.

The contractor shall visit the spots of work and ascertain the site conditions. The contractor shall satisfy himself of the conditions prevailing in the spots where the work is

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actually to be executed and its environs and the prices in the bill of quantities (Price Bid) shall be treated as those which were worked out taking fully into consideration the prevailing site conditions, hydrological conditions, extent and nature of work to be executed, the material availability, etc., Any claim on this ground at a later date shall be summarily rejected.

However, during the execution of the works, if the contractor has to encounter artificial obstructions, which in his opinion could not have been reasonably foreseen, then the contractor shall write forthwith to the Engineer in charge of such obstruction and remedial measures needed.

The Engineer in charge, if opined that the conditions cannot be possibly foreseen by an experienced contractor, he shall extend possible assistance to the contractor to overcome such obstructions. The opinion of the Engineer in charge shall be final and binding and the contractor is not entitled to advance these as reasons for any delay that may be caused to the completion of the project.

7.SUPERVISION:-

The contractor shall provide all necessary superintendence during the execution of the works and thereafter as may be necessary for the proper fulfillment of the obligations

under this contract. The contractor shall arrange for the deployment of proper qualified personnel at the site of work constantly, such supervising staff, apart from these separately set out as the requirements of the contract, shall be skilled and experience technical assistants, foremen and others competent enough to produce proper supervision.

In the event of any staff of the contractor being non co-operative, negligent, incompetent or misconduct, the Engineer, the Engineer in charge shall have the liberty to object to the placement of such staff at the site or other place of works and will promptly issue notice in writing to the contractor for the removal of such staff members. It will be obligatory on the part of the contractor to remove/ change such persons in the larger interests of the works.

8.DRAWINGS AND SPECIFICATION

The contractor shall furnished to the Employer as many copies of the design and detailed drawings and supplementary drawings may be considered reasonably necessary at no extra cost. Before commencement of the work, it will be obligatory on the part of the contractor to furnish a detailed plan of action along with layouts showing the position of

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the construction plants and other facilities required and proposed to be provided for this contract.

9. REFERENCE MARKS:-

The contractor shall establish additional reference points and bench marks as may be necessary at his cost. The contractor shall remain responsible for the accuracy and sufficiency of the reference and bench marks. The contractor shall take proper precautionary steps to ensure that the reference lines and bench marks established for the works are not disturbed and shall make good any damages caused.

10.CHECKS:-

The Engineer in charge or his representative is at liberty to check the correctness of the works. The suitability of the materials used, design mix etc. The contractor will raise no objections for such checks and shall provide necessary labour and instruments to carry out such checks to the Engineer in charge as well as his representative and co-operate in the checks. However, such checks will not absolve the contractor of his responsibility of maintaining the accuracy of the work.

11.INFORMATION AND DATA

The information and data made available to the contractor in respect of the works and site conditions are only general and the contractor is advised to get himself fully acquainted with the nature of the location of the works and the surroundings, quarries, local conditions and such other aspects that are relevant to the works.

12. AUTHORITY OF ENGINEER IN CHARGE:-

It shall be accepted that the authority of the Engineer in charge shall be an integral part of the contract in all matters regarding the quality of materials, workmanship, removal of improper work, interpretation of the contract drawings and specifications, mode and procedure of carrying out the works where the decision of the Engineer in charge shall be final and binding on the contractor. The Engineer in charge shall have absolute authority on all technical matters and payment considerations except where the arbitration clause is invoked.

13.LABOUR

The contractor shall not employ any person who has not completed fifteen years of age in connection with the works under this contract.

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The contractor shall furnish the information on various categories of labour employed by him to the Engineer in charge in the form prescribed for this purpose.

The contractor shall in respect of labour employed by him comply with or cause to be complied with the provisions of various labour laws, rules and regulations as applicable to them in regard to all matters provided therein and shall indemnify the Employer in respect of all claims that may be made against the Employer for non compliance thereof by the contractor.

Notwithstanding anything contained herein, the Employer reserves the right to take such action as may be deemed fit and proper for the compliance of various labour laws and recover the costs thereof from the contractor.

14.SAFETY PROVISIONS:-

The contractor shall arrange for the safety provisions in his operation as required including the provisions in the safety manual published by the central water and power commission. New Delhi (January 1962 edition). In case the contractor fails to make such arrangements the Engineer in charge shall be entitled to cause them to be provided and to recover the cost thereof from the contractor.

For failure to comply with the provision of Safety Manual, the contractor shall without prejudice to any other liability, pay the Employer a sum for each day of default at the rates that will be fixed by the Employer.

15.CONTRACTOR DIED OR BECOME INSOLVENT OR INSANE:-

In the event of death or insanity of the contractor, the contract may be terminated by notice in writing, pasted at the site and advertised in the issue of the local newspaper. All acceptable works shall thereafter, be paid at appropriate rates after recovering all the contractor's dues to Employer, to the persons entitled to receive and give a discharge for such payments.

If the contractor is imprisoned because insolvent compound with his creditors has a receiving order made against him or carriers on business under receiver for the benefit of the creditors of any of them or being a corporation goes into liquidation or commences to be wound up not being a voluntary winding up for the purpose only of amalgamation or reconstruction, the employer shall be at liberty.

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- a) To give such liquidator, receiver or other persons in whom the contract may become vested the option of carrying out the contract or a portion thereof to be determined by the employer, subject to his providing an appropriate guarantee for the performance of such contractor.

To terminate the contract forthwith by notice in writing to the contractor the liquidator, the receiver or person in whom the contract may become vested and take further actions as provided in the clause pertaining to default by contractor, treating as if this termination is ordered under the respective clause.

16. DEFAULT BY CONTRACTOR:-

If the contractor shall become bankrupt or have a receiving order made against him or shall present his petition in bankruptcy or shall make an arrangement with or assignment in favour of his creditors or shall agree to carry out the contract under a committee of inspection of his creditors, or being a corporation shall go into liquidation (other than a voluntary liquidation for the purpose of amalgamation or reconstruction), or if the contractor shall assign the contract, without the consent in writing of the employer first obtained, or shall have an execution levied on his goods, or if the engineer in charge shall certify in writing to the employer that in his opinion, the contractor.

- a) Has abandoned the contract, or
- b) Without reasonable excuse has failed to commence the works or has suspended the progress of works for twenty eight days after receiving a written notice from the Engineer in charge to proceed or
- c) Has failed to remove materials from the site or to pull down and replace work for twenty eight days after receiving the written notice from the engineer in charge stating that the said materials or work stands condemned and rejected under these conditions, or
- d) Despite previous warnings in writing by the Engineer in charge, not executing the works and achieving the progress as stipulated in the programme schedule drawn for the contract or is persistently or flagrantly neglecting to carry out the obligations under this contract, or
- e) Has, to the detriment of good workmanship, or in defiance of the instructions of the Engineer in charge or in contrary, sublet any part of the contract, then the Employer, may at his option, after giving two weeks notice in writing to the contractor, enter

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upon the site and the works and expel the contractor there from without thereby voiding.

17. FORCE MAJEURE:-

Neither party shall be liable to the other for any loss or damage occasioned by or arising out of Acts of God such as unprecedented flood, volcanic eruptions, earthquake or other special risks referred above which prevent the performance of the contract and which could not have been foreseen or prevented by the prudent person.

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SPECIAL CONDITIONS

1. DESIGN OF COMPONENTS.

The entire works should be done as directed by the TWAD Board officers.

2. SECURITY DEPOSIT

Within 15 days from the date of the Letter of Acceptance, the successful bidder shall deliver to the Employer a performance Security in the form of National Savings Certificate/ Post Office Savings Deposit account purchased within the State of Tamil Nadu and pledged in favour of the Executive Engineer concerned / unconditional and irrevocable Bank guarantee issued by any one of the following banks encashable within Tamilnadu. Union Bank of India/ State Bank of India/ Indian Bank/ Canara Bank/ Bank of India for an amount of Rs (equivalent to 2% of the total value of the contract **or {a.** For Tenders received with up to **5 % less than** the departmental value , the successful tenderer should remit **2 % towards** Security Deposit on Contract value **or b.** For Tenders received with **5 to 15 % less than** the departmental value, the successful tenderer should remit **4 % on contract value towards** Security Deposit. **C.** For Tenders received with **beyond 15 % less than** the departmental value, the successful tenderer should remit **5 % on contract value towards** Security Deposit. The bidder along with the performance security, shall deliver a non-judicial stamp paper for Rs. 100 /- (Rupees One hundred only) at his cost for executing the agreement.

3. PAYMENT

Payment for the work done by the contractor shall be based on detailed measurement recorded at various stages of the works. The contractor or his authorized representative shall be present at the time of recording the measurement and sign the measurement book or level /field book as an acknowledgement of this measurement recorded.

If for any reason the contractor or his authorized representative is not available and / or the work is suspended by the Employer, recording of measurements will be done by the Employer without the presence of the contractor or his authorized representative and the measurement deemed to have accepted by the contractor.

Payment will be made as per the payment condition specified in the “General Conditions of Contract” appended to the “ standard contract Terms and conditions “ purchased by the contractor by remitting Rs.250. Normally interim payment shall be made on the claims of the contractor, based on the actual measurement of finished items of work

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supported by a certificate from the Engineer in charges subject to the condition that at no point of time, the amount of such payment shall not exceed the break downs set out in the payment schedule.

4. INCOME TAX & GST

The contractor should produce the current income tax clearance certificate as a proof of having remitted the income Tax up to date. During the course of the contract period, deduction of income tax shall be made at the prevailing rates from every payments as may be specified by the Income Tax Department. 18% GST Shall be provided by remitting GST on TDS (both CGST and SGST for 1% each).

5. Liquidated Damages

Provided the firm/contractor fails to complete the work as a whole or part thereof within the stipulated period, the firm/contractor shall be liable to pay liquidated damages at 0.10% of the value of the unfinished works per week of delay till the completion of the work in full and in all respects and handing over to the department. The amount recoverable towards liquidated damages shall however be restricted to 5% of the total contract value. The imposition of the liquidated damages clause will be without prejudice to the rights of the Employer to terminate the contract as time barred.

6. Recovery of money payable to the TWAD Board

All losses, costs, damages and expenses and other money payable to the Board by the contractor under any stipulation in the contract, may be retained out of any money due or which may subsequently become due from the Board to the contractor under any contract or otherwise whatsoever and in case such money then due or to become due to the contractor by the Board shall be insufficient to pay such losses, costs, damages, and other money payable to the TWAD Board by the contractor, it shall be lawful for the Engineer in charge without any further consent on the part of the contractor, to sell or dispose of any or all the government promissory notes or securities deposited in the Board by the contractor as aforesaid and with and out of the proceeds of such sale, after payment of all expenses connected therewith or reimburse and pay to the Board all such losses, cost, damages and expenses and other money payable to the contractor. And in case such proceeds of sale of the said government promissory notes or securities shall be insufficient for such purpose then and in that case it shall be lawful for the Board to recover the residue thereof if necessary by legal proceedings and or by resorting to revenue recovery act against the contractor.

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7. Foreclosure of Works

The Employer shall have the right to issue notice to the firm/ contractor, for any reason whatsoever does not require the whole or part of the works to be carried out after the award of the contract. The contractor shall not have any claim towards compensation or whatsoever, on account of any profit or advantage, which he might have derived from the execution of such works. For the works executed which could not be utilised in view of the foreclosure, the firm/ contractor shall be paid a eligible amount as certified by the Engineer in charge.

8. Risk Insurance

The firm/ Contractor shall provide risk insurance at their/ his cost against loss or damages to the construction to cover from the start date to the end of the Defects Liability Period, for the following events

- q Loss of or damage to Equipment
- q Personal injury or death

Policies and certificates for insurance shall be delivered by the Contractor to the Engineer for the Engineer's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred. The contractor will not be eligible for any payment on this account.

If the Contractor does not provide any of the policies and certificates required, the Employer shall effect the insurance which the contractor should have provided and recover the premiums the Employer has paid from payments otherwise due to the contractor or, if no payment is due, the payment of the premiums shall be a debt due alterations to the terms of an insurance shall not be made without the approval of the Engineer

9. LAND FOR ACCOMMODATION OF LABOUR

The Department will assist to get the space if any available nearby the site. The charges if any to be paid to the land as rent, the contractor has to bear the above charges. if no space is available nearby, the contractor has to make his own arrangement for accommodation required for the labour etc employed by him for this work.

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10. ARBITRATION & JURISDICAION OF COURT

In the event of any dispute arising between the parties hereto in respect of any matter comprised in the contract, the same shall be settled by a competent court having jurisdiction over the place where the contract is awarded and agreement is concluded and by no other court.

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ADDITIONAL SPECIFICATION

DECISION OF ENGINEER

1. If the contractor or claims that the decision or the instructions of the Engineer /Board are unjustified and that accordingly he is entitled to extra payment on account thereof he shall forthwith notify this to the Engineer/Board to record his decision and reasons thereafter in writing and shall within two weeks stake his claims in writing to the Engineer/Board thereafter. The Engineer/Board shall thereafter, within four weeks of the receipt of the claim, reply to the points raised in the claim.

- II. In the contract whenever, there is a desecration of exercise of will by the Engineer/Board during the progress of the work, the mode of manner of the exercise of the discretion shall not be a matter for arbitration.
- III. The decision of the Engineer/ Board shall be final conclusive and binding as all parties to the contract upon all questions relating to the meaning of the specifications and instructions her in before mentione nd as to any other question claim right matter or things whatever in any way arising out of or relating to the contract, instructions or order or these conditions or otherwise concerning the works or failure to executive the same whether arising during the progress of works or after the completion or abandonment there of or the contract by the contract shall be finally conclusive and binding on the contractor.

QUANTITIES

The quantities furnished in the schedule "A" are only approximate, Any omission or excess in quantities may arise during execution according to the site condition. Payment and deduction for the excess and omissions in quantities respectively will be as per the Unit rate in the agree nt to be concluded. Any alteration of work or any additional works during execution has to be done by the main contractor only. If no rate in the schedule "A" is applicable or derivable for the additional works, the rates will be arrived at as per rules and regulations governing for the working out of rates for supplemental item of work and will be paid to the contractor. The contractor is not allowed to quote his rates in excess of the permissibl departmental rates for these additional items of work.

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TECHNICAL SPECIFICATION

1. **Description of objectives.:** Surveying and leveling for the proposed alignment of pipe line by Total station method by engaging qualified Engineers with minimum qualification of B.E.(Civil), Technical Assistant Grade I & II and Mazdoor category I, using the contractor own survey instruments, Special tools and plants vehicle hire charges, transportation, initial incidental charges such as jungle clearance etc. Preparation of Tree map and alignment plan, duly incorporating salient details, such as topographical features, permanent land marks, bench marks etc. at appropriate points, alignment plans and longitudinal section plan at 30 m intervals in addition to other salient locations such as branches, bends, culverts, river crossing etc, with all field particulars in Auto Cad and submission of plan 3 set, along with LF books with making all entries with certification by above qualified Engineers with soft copy and marking TBM stones at required places with bench mark registers soft copies 3 set and hard copy 5 set etc., complete as directed by TWAD Board officers.

2.(i) Level survey

1. The level survey comprises longitudinal sectional survey for the proposed Head works to Treatment Plant, alignment of transmission main, Pumping Main, Feeder main and Branch Feeder main
2. The total length to be surveyed is approximately 444 KM
3. Longitudinal levels to be taken at 30 m interval or less and to prepare the LS contour plans and tree maps with Auto CAD drawings of five sets and soft copies in CD in Quintuplicate. Plan should be prepared adopting the scale of 1 cm = 30 M. Also, a Condensed LS Plan for the main alignment at 500 Metres interval shall be prepared for the entire project area from the proposed Head works sites.
4. TWAD Board will provide a base map marked with proposed project area.

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5. Names of the villages and cross roads along the alignment to be marked with length. Details of bridges, culverts, rivers and channels crossing the alignment with LS, Length etc. to be properly marked.
6. The number of bends (turnings) with degree along the alignment and all topographical details, important land marks and other relevant details if any shall be marked in the drawings.
7. All the drawing are to be given in draft stage and on approval by the Executive Engineer, the same have to be provided in Auto CAD drawings and soft copies in CD in Quintuplicate.
8. All the drawings should be in A1 size
9. The levels will be checked by the Assistant Executive Engineer in charge of the work at random intervals.
10. Standard bench marks stones with indelible markings of LS, Altitude with reference to M.S.L. and relevant details shall be fixed at every branch point, probable locations of infra structures and any other locations as directed by the field Engineers.
11. Copy of relevant FMB sketches for the selected sites and alignment shall be furnished.

.ii. Topographical survey

1. Topographical survey is to be done at proposed location of Booster stations, Over head tanks and Group sumps.
2. Levels are to be taken at 10 m grid.
3. Approximate size of the proposed locations are in the range of 30 m x 30 m or 50 m x 50 m
4. Contour maps are to be prepared at 10 cm contour interval

(iii). OUTPUT

The Contractor has to submit the reduced level within 2 days after completion of the day work at site. All the draft print-outs of every 100 Km of work done are to be submitted in A1 size paper. All the comments offered by TWAD Engineer in draft print outs should be incorporated in the final drawings. All final drawings are to be submitted in A1 size and soft copy in CD in Quintuplicate.

- 3) The contractor shall prepare detailed map to scale showing the locations of all the rural habitations identifying each individual habitations by giving suitable ID No. and street with reference to permanent land mark.

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- 4) The Contractor shall carry survey and leveling operations from the intermediate booster sumps under stage I to the habitations along public roads and path ways to decide the length of sub mains, feeder mains and branches.
- 5) The contractor shall prepare the following plans based on the results of Survey and Leveling operations conducted.
 - i. LS plan from each Booster station under stage I proposal to all the habitations to be covered in the stage II proposals
 - ii. The alignment plan for fixing the alignment of transmission main, booster main sub mains, branch mains and feeder mains for covering the entire net work of all the habitations.
 - iii. The town, village tree map for all beneficiaries indicating the street length, main, levels and the poromboke land in and around the habitations.

6) The rate of progress and payment schedule

The proposed rate of progress and payment schedule will be as below:-

Sl.No	Achievement (cumulative)	Time of completion (cumulative)	Payment Schedule (cumulative)
1.	On completion of 222 KM (50% of work) Including preparation of draft plans or drawings and submission of all relevant records in complete shape.	40 days	Part Bill
2.	On completion of 222 KM (100% of work) Including preparation of finalized plans or drawings and submission of all relevant records in complete shape both in hard and soft formats and after the acceptance of the Engineer-in-charge.	50 days	Final Bill
3.	Withheld Amount: 2.5% of the value of work will be withheld and release after the period of six months.		

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7. Details of habitations union wise to be covered.

Sl.No	Area of Project	No. of habitations.
1.	1951 Habitations in 7 Unions & 10 TPs in Dindigul District	1951

8. All the levels should be with reference to Mean Sea Level (MSL) The availability of nearest GTS bench mark may be ascertained and proceed with the GTS bench mark level always. It is essential that the survey is closed every day and it should be ensured that the difference is less than 2 C.M. per KM failing which every leveling survey for that stretch should be repeated the following day. Alternatively,

2 instruments may be simultaneously deployed for the survey outline from common level staff to ensure check on the levels.

The levels should be recorded in leveling Field books and the LF books should be furnished to the TWAD Board. The survey results should be plotted in the form of a longitudinal section showing the trench, cross section with location levels and profile and a 2 plans with the bearings, showing the alignment deviations. The other proposals to be recorded during the alignment survey and to be shown on the plans are listed below:-

- i) Details of adjacent roads
- ii) Details of adjacent railway lines, bridges and culverts
- iii) Details of crossings on pipe line alignment such as, road crossings, railway crossings, river crossings, Odai crossings, lake crossings or pond crossings.
- iv) The statement showing the bench marks with location identification (land mark) shall be submitted in the following format in soft and hard copy.

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RECORD OF BENCH MARKS

Sl.No.	BM No.	Reach		Location	LS	BM Level	Remarks
		From	to				

TECHNICAL ASSISTANTS

Required No. of qualified Technical Assistants are must be engaged and their technical qualifications certificates must be produced.

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