

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD
BID DOCUMENT
FOR OPERATION AND MAINTENANCE OF CWSS
HOGENAKKAL WATER SUPPLY AND FLUOROSIS MITIGATION PROJECT
PACKAGE-I



NAME OF WORK :

Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) – 3rd call - Package I

List of Documents

(Cover-I)	
Volume-1	Bid Document
Volume-2	General and Particular Specification
Volume-3	Mechanical, Electrical, ICA Equipments Spares Specification
Volume-4	Civil Specification
Volume-5	List of Equipments
Volume-6	List of Drawings
Volume-7a & 7b	O&M Manual
(Cover-II)	
Volume-8	BOQ-Price Bid

Last date of submission : Up to 03.00 P.M on 27-02-2020

Opening date : At 3.30 P.M on 27-02-2020

Tenderer

Chief Engineer, TWAD Board, Vellore

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD**HOGENAKKAL WATER SUPPLY AND FLUOROSIS MITIGATION PROJECT****PACKAGE-I****TECHNICAL BID COVER – I****Volume-1****BID DOCUMENT****NAME OF WORK :**

Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) - Package I

Description of work : Operation and Maintenance of Intake works, Raw Water Pumping Station at Hogenakkal, 160 MLD Water Treatment Plant at Yanaipallam in Bevanur Reserve Forest area, Booster Pumping Station at Kanavai in Bevanur Reserve Forest area, 240 Lakh litre capacity Master Balancing Reservoir at Madam (near Pennagaram), 1500 mm diameter Raw Water and Treated Water Transmission main from Intake at Hogenakkal to Master Balancing Reservoir (MBR) at Madam for providing water supply to Dharmapuri and Krishnagiri Districts through pipeline networks and appurtenances under Packages-II, III, IV & V and SCADA works in Package-I and SCADA interconnectivity work at 74 Locations in Packages-II, III, IV & V and Under Ground Sewerage Scheme (UGSS) to Hogenakkal village with collection System, Pumping station and 0.35 MLD FBBR type STP at Hogenakkal and allied works under Package-I of Hogenakkal Water Supply and Fluorosis Mitigation Project for the period from 01.04.2020 to 31.03.2024

Last date of submission: **Upto 3.00 PM. on 27.02.2020**

CHECK LIST TO BE ENCLOSED BY BIDDER (along with Bid Documents)

The check list is only indicative and is to assist the bidder in satisfactorily enclosing all required major documents for Technical Qualification. The list is not exhaustive and the bidder should read all clauses of the bid document so as to enclose all documents as required.

A. BID SECURITY:

- I) Bid security for a value of Rs.16.50 Lakh to be furnished
 II) Furnish the details of Bid Security as under

Sl. No	Name of the Bidder	Amount and type of security	Issued by

B. ELIGIBILITY / QUALIFICATION CRITERIA

Sl. No	Description	Requirement as per Bid document Rs.in Crore	Particulars as furnished by the bidder	Page No. with ref. no. if any, where the particulars are furnished by bidder.
	Financial Turnover & Cash flow.			
1	Minimum Annual Turn Over in any one of the last Three financial years (2016-17, 2017-18 & 2018-19)	Rs 22.00 Crore		
2	Minimum Cash Flow: Minimum Cash flow required in Rs... in Crore	Rs 1.37 Crore		
3	Financial Turn Over in Similar Works : The bidder should have Satisfactorily - Completed Water Supply Scheme or Maintained Water Supply Scheme of value not less than Rs.22.00 Crores in the last five financial years (2014-15 to 2018-19) either a) in single agreement or b) in two agreements	Rs 22.00 Crore Or Rs.33.00 Crore		
4	Bid capacity The available Bid capacity	Rs.22.00 Crore		
5	Physical Work Experience in the last Five financial years (2014-15 to 2018-19)			

5.1	Construction of Collection Well/ Infiltration Well / Intake Well / Jack Well / Off take arrangements: Minimum experience in Construction of --- number of Collection Well/ Infiltration Well / Intake Well / Jack Well / off take arrangements should have Completed or Maintained for a continuous period of at least 1 year in the last five years.	1 No.		
5.2	Full Scale Water Treatment Plant in Million Litres per day (MLD): Minimum Aggregate Experience of Full Scale Water Treatment Plant - Completed or maintained for a continuous period of at least 1 year in the last five years.	(a) 32 MLD. (b) Out of which Minimum 1 number of 15 MLD Capacity and above		
5.3	MS/DI/CI Pipeline in Kilometre (KM): Minimum Aggregate experience of pipeline in KM - MS/DI/CI Pipe - Should have supplied, laid, jointed, tested and satisfactorily completed or maintained for a continuous period of at least 1 year in the last five years	1.12 KM		
5.4	PUMPING MACHINERY INSTALLED IN KILO WATT (KW): Minimum aggregate capacity of pumping machineries installed (KW), erected, tested and successfully completed or maintained for a continuous period of at least 1 year in the last 5 years	(a) 2460 KW in Vertical Turbine and Centrifugal pumpset. (b) Out of which, Minimum 1 number of 112 KW (150 HP) and above Vertical Turbine / Centrifugal Pump set.		
5.5	TRANSFORMER SUB STATION Minimum aggregate experience of transformer sub-station erected, tested and completed or maintained for a continuous period of at least one year in the last 5 years	1 No. of 500 KVA of Transformer Substation		
6.	Whether performance eligibility for 5.1 to 5.5 above are based on certificate issued by the officer not less than the rank of Executive Engineer of that user departments and in the case of Private organization from the General Manager of that Organization (along with necessary countersignature / Notarisation & photographs)		(Yes / No)	

7.	Whether Annexure - I to XI are all filled up fully and enclosed?	(Yes / No)
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If Yes, give details as under (Notarized as per requirement)

Sl.No	Description	Page Nos. in the Bidders Document
1.	Performance of the bidder showing total monetary value of Civil Engineering works (completed or maintained water supply schemes) for the last three years (2016-17, 2017-18 & 2018-19) (7.1.4) (Annexure-I)	
2.	Average Annual Construction Turn over Civil Engineering works (completed or maintained water supply schemes) for the last three financial years (7.1.5) (Annexure-II)	
3.	Experience in works of similar nature of Magnitude within a period of last 5 financial years (2014-15,2015-16, 2016-17, 2017-18 &2018-19) (7.1.6) (Annexure-III)	
4.	Commitment of works on hand (7.1.6) (Annexure-IV)	
5.	Works for which Bids are already submitted (7.1.6) (Annexure-V)	
6.	List of equipments available with bidder (7.1.7)(Annexure-VI)	
7.	Qualification / Experience of key personnel proposed for technical and administrative functions under this Contract (7.1.8) (Annexure-VII)	
8.	Sample Format for evidence of access to or availability of credit facilities (7.1.9) (Annexure-VIII)	
9.	Details of Litigation if any (7.1.10) (Annexure-IX)	
10.	Declaration by the bidder pertaining to blacklisting / banned/debarment etc., (7.1.11) (Annexure-X)	
11.	Format for O&M staff required for operating methodology (Annexure-XI)	
12.	Affidavit as an undertaking given by the Contractor should be certified by the Notary duly stamped on a Notaries Stamp (Annexure-XII)	

8. List of Certificates to be enclosed by the Bidder.

(Notarised as per requirement)

Sl.No	Description	Page Nos. in the Bidders Document
1.	Signature of the proprietor or proprietors attested by the Notary public.	
2.	Signature of all the partners / power of attorney attested by the Notary public	
3.	Registration of the firm, Signature of all the authorized person attested by the Notary public	
4.	A copy of the listed Power of Attorney authorizing the signatory of the bidder.	
5.	Proof of Registration of firm / company	
6.	Audited Balance sheets for the last three financial years (2016-17, 2017-18 & 2018-19)	
7.	Credit line certificate from Financial institutions	
8.	Income Tax clearance certificate.	
9.	GST Registration certificate.	
10.	Certificate of performance issued by not less than the rank of Executive Engineer / Responsible person of the private organization.	

BID DOCUMENTS**INDEX**

Item No	Description of Work	Page No
I	Invitation of Bids	
II	Letter of Application	
III	Instructions to Bidders	
A	GENERAL	
1	Scope of the Bid	
2	Method of Bidding	
3	Modification or more than One Tender	
4	Cost of Bidding	
5	Site Visit	
B	ELIGIBILITY / QUALIFICATION CRITERIA	
6	Eligible Bidder	
7	Qualification of the Bidder and Special attention to Bidders	
C	BID DOCUMENTS	
8	Contents of Bid Documents	
9	Clarification of Bid Documents	
10	Amendments to Bid Documents	
D	PREPARATION OF BIDS	
11	Language of the Bid.	
12	Documents comprising the bid	
13	Bid Prices	
14	Currencies of Bid and Payment	

Item No	Description of Work	Page No
15	Bid Validity	
16	Bid Security	
17	Compliance to Technical Design and Specification	
18	Formal and Signing of Bid	
19	Pre Bid Meeting	
E	SUBMISSION OF BIDS	
20	Sealing and marking of Bids	
21	Deadline for submission of Bids	
22	Late Bids	
23	Modification substitution and withdrawal of Bids	
F	BID OPENING AND EVALUATION	
24	Bid Opening	
25	Process to be Confidential	
26	Clarification of Bids	
27	Examination of Bids and determination of Responsiveness	
28	Correction of Errors	
29	Evaluation and comparison of Bids	
G	AWARD OF CONTRACT	
30	Award Criteria	
31	Employers Right to accept any Bid and to Reject any or all Bids	
32	Notification of Award	
33	Registration in TWAD	
34	Performance Security	
35	Signing of Agreement	
36	Mobilization Advance	
37	Forfeiture of Performance Security	

Item No	Description of Work	Page No
IV	PROGRAMME SCHEDULE	
38	Project Maintenance and Milestone	
39	Programme Schedule/Rate of progress/Milestone	
40	Penalty for Defective Operation and Maintenance of works	
41	Liquidated damages	
42	Foreclosure of operation and maintenance works	
V	PAYMENTS AND RECOVERIES	
43	Payment Schedule	
44	Release of performance security and Retention amount	
45	Recovery of money payable to the TWAD Board	
46	TDS on Income Tax	
47	Excise duty	
48	GST	
49	Fund contribution for manual workers	
50	Price Adjustment	

VI. LIST OF ANNEXURES AND CERTIFICATES

(A) Annexures:

- 1) Performance of the Bidder showing total monetary value of Civil Engineering works (completed or maintained water supply schemes) for the last three years (2016 - 17, 2017-18 & 2018-19) (7.1.4) (Annexure-I)
- 2) Average Annual Construction Turn over Civil Engineering works (completed or maintained water supply schemes) for the last three financial years (7.1.5) (Annexure-II)
- 3) Experience in works of similar nature of Magnitude within a period of last 5 financial years (2014-15, 2015-16, 2016-17, 2017-18 & 2018-19) (7.1.6) (Annexure-III)
- 4) Commitment of works on hand (Annexure-IV)
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- 6) List of Equipments available with bidder (Annexure-VI)
- 7) Qualification/Experience of key personnel proposed for technical and administrative functions under this contract (Annexure-VII)
- 8) Sample Format for evidence of access to or availability of credit facilities (Annexure-VIII)
- 9) Details of Litigation if any (Annexure-IX)
- 10) Declaration by the bidder pertaining to blacklisting/debarment etc.,(Annexure-X)
- 11) Format for O&M staff required for operating methodology (Annexure-XI)
- 12) Affidavit as an undertaking given by the Contractor should be certified by the Notary duly stamped on a Notaries Stamp (Annexure-XII)

(B) Certificates:

- 1) Signature of the Proprietor or Proprietors attested by the Notary Public
- 2) Signature of all the Partners/Power of attorney attested by the Notary Public.
- 3) Registration of the firm, signature of the authorized person attested by the Notary public.
- 4) A copy of the listed Power of Attorney authorizing the signatory of the bidder
- 5) Proof of Registration of firm/company.
- 6) Audited Balance sheets for the last three financial years.
- 7) Credit line certificate from Financial Institutions.
- 8) Income Tax clearance certificate.
- 9) GST Registration certificate
- 10) Certificate of Performance issued by not less than the rank of Executive Engineer/Responsible person of the private organization.

VII GENERAL CONDITIONS OF CONTRACT

1. Definitions
2. Interpretations
3. Authority of Engineer Incharge
4. Sufficiency of Bid
5. Priority of Contract Documents
6. Secrecy of the Contract Documents
7. Instructions in Writing
8. Commencement of Works
9. Reference Marks
10. Supervision
11. Subletting of contract
12. Specifications and Checks
13. Custody and supply of drawings and documents
14. Bill of Quantities
15. Change in the Quantities
16. Additional Items
17. Order Book
18. Independent Inspection
19. Covering and Opening of Works
20. Temporary Diversion of Roads and Commencement of Work
21. Notice to Telephone, Railway and Electric Supply Undertaking
22. Watching and Lighting
23. Measurement of Work
24. Tools and Plants.
25. Information and Data
26. Coexistence with other Contractors
27. General Responsibilities and Obligations of the Contractor
28. Labour
29. Restriction of Working Hours
30. Right of way and Facilities
31. Removal of Improper Work. Material and Plant
32. Default of contractor in Compliance
33. Default by Contractor
34. Power to vary Work
35. Extra for Varied Works
36. Omissions
37. Notices regarding Shoring etc
38. Cost of Repairs
39. Suspension of Works
40. Suspension of Progress
41. Termination
42. Plant etc not to be removed
43. Contractor not to occupy Land etc
44. Power Supply
45. Deleted
46. Final Certificate
47. Completion Certificate
48. Taking Over
49. Performance Guarantee
50. Deleted
51. Operating and Maintenance Manual
52. Work on Private Property
53. Protection
54. Accident or Injury to Workmen
55. Insurance, ESI & EPF

- 56. Care and Risk
- 57. Safety Provisions
- 58. Provision of Health and Sanitary Arrangements
- 59. Patent Rights
- 60. Royalties
- 61. Old Curiosities
- 62. Contractor Dying, becoming Insolvent or Insane
- 63. Force Majeure
- 64. Payment out of Public Funds
- 65. Bribery and Collusion
- 66. Technical Audit
- 67. Settlement of Dispute
- 68. Reservation of Right
- 69. Engineer's Decisions
- 70. Instructions
- 71. Schedule of Maintenance
- 72. Equipments and Tools to be made available
- 73. Spares

PART – I	Role and Responsibilities of the Contractor
PART – II	Payment mode for Contractor
PART – III	Role of the TWAD board
PART – IV	Labour laws and procedure adopted
PART – V-	Special conditions

VIII Special conditions of Contract

IX Estimated List of Spares

- a. Mechanical Spares
- b. Electrical Spares
- c. ICA Spares
- d. Miscellaneous Spares

X Model Formats

- 1 Letter of Negotiation
- 2. Forwarding slip to Lumpsum Agreement
- 3. Form of Agreement (Lumpsum)
- 4. No corrections/ alterations certificate
- 5. Performance Bank Guarantee (Unconditional)
- 6. Bid Security (Bank Guarantee)

XI Bill of Quantities

I. INVITATION OF BIDS – ITEM WAR (TWO COVER SYSTEM)

IFB No: (National Competitive Bidding)	23 / Hog Pkg.I to V / 3 rd call / DO / CE / VLR / 2020 /Dated : 23.01.2020.				
Name of Work	Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) – 3rd call				
	Package I	Package II	Package III	Package IV	Package V
Approximate value of work (Rs.in Crore)	22.00	23.15	23.40	28.30	26.70
Bid security (Rs.in Lakhs)	16.50	17.40	17.60	21.30	20.10
Eligible class	Class I	Class I	Class I	Class I	Class I
Tender invitee	The Chief Engineer, TWAD Board, Vellore – 632006.				
Sale of Bid & place of sale	From 27.01.2020 to 25.02.2020. Bid document may be purchased by remitting cash or DD in favour of concerned Executive Engineer of Project Maintenance Division for an amount of Rs.1000.00+12% GST(for each work) for Packages I to III from O/o the Executive Engineer, TWAD Board, Project Maintenance Division, Hogenakkal Project House Campus, A.Jettihalli (P.O), Dharmapuri-636807 for Package IV from O/o the Executive Engineer, TWAD Board, Project Maintenance Division, Dinnur Water Tank, Denkanikottai Road, Hosur-635 109 and for Package – V from O/o the Executive Engineer, TWAD Board, Project Maintenance Division, 5/85, Gopalakrishna Colony, Shanthi Nagar, Krishnagiri-635 001. If bid document is required by post an amount of Rs.500/-(for each work) to be paid additionally.				
web site down loading at free of cost	www. tenders.tn.gov.in and www.twadboard.tn.gov.in .				
For all Packages					
1.	Date and time of Pre bid meeting	On 11.02.2020 at 11.30 am at CE's chamber, TWAD Board Vellore.			
2.	Last date and time of downloading bid document	25.02.2020 up to 5.45 P.M			
3.	Last date and time for receipt of bid document	27.02.2020 up to 3.00 P.M			
4.	Last date and time for opening of Technical bid	27.02.2020 at 3.30 P.M			
Chief Engineer(A/c), TWAD Board, Vellore					

II. LETTER OF APPLICATION

(Letter head paper of the Applicant, including full postal address, telephone no., fax no., cable address, and E.mail)

Dated:.....

To
**The Chief Engineer,
 TWAD Board,
 No.8, 1st East Main Road,
 Gandhi Nagar, Vellore – 632 006.**

Sir,

Being duly authorized to represent and set on behalf of

(Hereinafter "the Applicant"),

and having reviewed and fully understood all the information provided, the undersigned hereby apply for consideration as a bidder for the following

Invitation for Bid No F.No: 23/ Hog Pkg.I to V/3rd call/DO/CE/VLR/ 2020 /Dated: 23.01.2020.

NAME OF WORK:

Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) - 3rd call - Package I

Attached to this letter please find copies of original documents defining

- the Applicant's legal status
- the principal place of business and
- the place of incorporation (for applicants who are corporation) or the place of registration and the nationality of the owners (for applicants who are partnerships or individually owned firms)

Your Agency and its authorized representatives are hereby authorized to conduct any inquiries or investigations to verify the statements, documents and information submitted in connection with this application, and to seek clarification from the bankers and clients regarding any financial and technical aspects. This 'Letter of Application' will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves to verify the statements and information provided in this application, or with regard to the resources, experience and competence of the Applicant.

This application is made in the full understanding that

- Bids by the applicants will be subject to verification of all information submitted for consideration, at the time of bidding.
Your agency reserves the right to
- amend the scope and value of any contract bid under this project
- and reject or accept any application, to cancel the entire bidding process and reject all the applications and
- Your agency shall not be liable for any such action and shall be under no obligation to inform the Applicants of the grounds for them

It is hereby certified that the unit rates and price for all the items covered in the Bill of Quantities set out in the Price Schedule have been furnished clearly in figures and words and it is hereby agreed to execute the works at the rates and prices mentioned therein and to receive the payments on measured quantities as per the Conditions of the Contract.

It is hereby distinctly and expressly declared and acknowledged that before the submission of the bid, the instructions therein have been carefully followed and the conditions of the Contract and other terms and conditions have been read. It is also declared and acknowledged that careful examination of the bid documents has been carried out with reference to the specifications, quantities, location where the said

Tenderer

Chief Engineer, TWAD Board, Vellore

work is to be done, investigation of the works to be done, materials required for this contract and their source and other requirements, covenants, stipulations and restrictions. It is distinctly agreed that no claim or demand will be made on the TWAD Board by the applicant, arising out of any misunderstanding or misconception or mistake of the said requirements, covenants, stipulations, restrictions, conditions etc on the part of the Applicant.

The Income Tax Clearance Certificate and GST Registration Certificate in currency are enclosed.

The Bid Security of Rs.16.50 Lakhs (Rupees Sixteen Lakhs and Fifty Thousand only) is enclosed in the shape of _____ (enter the form and other details of the bid security) drawn in favour of the Executive Engineer, TWAD Board, Project Maintenance Division, Dharmapuri. It is hereby agreed that in case the bid is accepted, the Performance Security to the value and in the manner/form prescribed by Employer will be submitted and agreement entered into within the time frame stipulated for the due fulfilment of the contract. It is agreed that in the event of non remittance of the required Performance Security and execution of the Agreement within the stipulated time frame, the Bid Security deposited with the bid will be forfeited. In the event of non acceptance of the bid offered by the Applicant, the Employer shall intimate the applicant of the rejection of his bid, upon which the applicant can get his Bid Security refunded on an application for the same. Any notice required to be served on the applicant shall be deemed to have been sufficient if delivered personally or left at the address given herein or sent by post either by registered mail or ordinary. Such notice shall, if sent by post shall be deemed to have been served on the applicant at the time when in due course of post it would be delivered at the address to which it is sent. For all purposes, the address given herein will serve as permanent address and any change therein will be promptly intimated then and there.

It is fully understood and agreed that on receipt of communication of acceptance of the bid from the accepting authority, there emerges a valid contract between the Applicant and TWAD Board represented by the officer accepting the bid and is expressly agreed that the bid documents with the schedules, conditions of the contract, negotiation communications and other correspondence connected to this contract will all constitute the contract for this purpose and be the foundation of rights on both the parties.

It is agreed that performance shall be considered as the essence of this contract and the work will be commenced immediately on getting information of the acceptance of the bid and any lack in performance of operation and maintenance affecting the efficiency of electro-mechanical appurtenances, damages to pipe lines leading to short supply of water, will be subjected to the relevant penal clauses contained in the Conditions of the Contract.

It is hereby agreed that the professionally qualified personnel to execute and to supervise the works shall be deployed as required in clause 10 of General Conditions of Contract.

The Applicant hereby agrees to undertake full responsibility for the safety, stability and soundness of all infrastructures, electro-mechanical installations, pipeline networks, appurtenances, etc., which will be operated and maintained by me / us during the contract period.

The Applicant hereby agrees that the bid will not be withdrawn during the period of validity as indicated in the bid documents and also during such extended periods agreed to by the applicant. The Applicant agrees that in the event of withdrawal of the bid during the validity period or extended period, the Bid Security is liable to be forfeited by Employer.

It is explicitly understood that the Employer is not bound to accept the lowest or any bid the Board may receive. It is hereby agreed that the Employer reserves the rights to reject any or all the bids without assigning any reasons therefor.

Dated this _____ day of _____
Month of _____

Signature of the Applicant
(To be signed by the authorized
Signatory with seal)

Tenderer

Chief Engineer, TWAD Board, Vellore

NAME OF WORK: Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) - 3rd call - Package I

III. INSTRUCTIONS TO BIDDERS

A. GENERAL

1. Scope of the Hogenakkal Water Supply and Fluorosis Mitigation Project

The Hogenakkal Water Supply and Fluorosis Mitigation Project with River Cauvery as source, with main objectives of (i) to provide safe drinking water to 3 Municipalities, 16 Town Panchayats and 7,639 habitations (including New habitations 884 Nos) in 18 Panchayat Unions in Dharmapuri and Krishnagiri districts and (ii) to mitigate the effects of Fluorosis disease caused by fluoride contents in the ground water sources, covering the total population of 35 Lakhs in two districts of Dharmapuri & Krishnagiri, spread over 9,650 sqkm and the scheme is implemented for ultimate quantity of 160 MLD.

The Project has been divided into 5 packages for easy Operation and Maintenance. Under this project, laying of about 10,169 Km of pipelines with pipe sizes ranging from 1500 mm to 63 mm dia. and construction of 1,627 civil structures are executed. By drawing water at an elevation of 246m and pumping to a habitation located at an elevation of 1,245 m through a combination of gravity and pumping systems.

In Dharmapuri District, Dharmapuri Municipality, 10 Town Panchayats and 3,245 habitations (including 355 new habitations) in 8 Panchayat Unions have been covered with total population of 16.10 lakhs in this project.

In Krishnagiri District, Krishnagiri & Hosur Municipality, 6 Town Panchayats and 4,403 habitations (including 529 new habitations) in 10 Panchayat Unions have been covered with total population of 18.90 lakhs in this project.

The source of water for this project is River Cauvery at Hogenakkal at a distance of 45 km west of Dharmapuri. The Raw water is taken from River Cauvery on the upstream side of the famous Hogenakkal waterfalls and pumped to Water Treatment Plant located at a distance of 6.15 km from the Intake works. The scope of project is to cover 7,639 Habitations, 3 Municipalities, 16 Town Panchayats and 18 Unions, benefiting about four million people. Treated water will be pumped to 240LL capacity Master Balancing Reservoir at Madam, about 11 km from Hogenakkal.

Two line of MS pipe outlets are provided at Master Balancing Reservoir at Madam. Through Transmission main of one outlet, water is conveyed by gravity to Union MBR's of Pennagaram Union (Part), Nallampalli Union and upto Nallampalli Union Sump at Sowlur, Dharmapuri Union, Mathur Union, Uthangarai Union, Morappur Union, Harur Union and Pappireddipatty union and Dharmapuri Municipality. From Union MBR's water is conveyed by gravity to Panchayat MBRs/Sumps and Pennagaram TP, Uthangarai TP, Kambainallur TP, Kadathur TP, B.Mallapuram TP, Harur TP and Pappireddipatty TP. From Nallampalli Union Sump at Sowlur water is conveyed by Pumping to 19 Panchayat MBR's. For habitations of Sitheri and Sittilingi Panchayats in Pappirddipatty and Harur Union, located in Kalvarayan hills water is conveyed by Pumping directly to OHTs. From Panchayat MBRs, water is conveyed to OHTs mostly by Gravity with coverage of 3066 rural habitations in Dharmapuri and Krishnagiri Districts.

From Transmission main of another outlet of Madam MBR, water is conveyed by gravity to Sumps at O.G.Halli and Pikkili and to the common sump located at Moongilpatti. From Pikkili sump water is conveyed by pumping to 5 Panchayat MBRs of Pennagaram Union (Part). From O.G.Halli sump water is conveyed by pumping to 5 Panchayat MBRs of Pennagaram Union (Part) and Papparapatty TP. From Moongilpatti common sump water is conveyed by pumping to Palacode TP, P.Chettihally Sump and Palacode Union MBR. From Palacode Union MBR, water is conveyed by gravity to 7 Panchayat MBRs and by on-line booster to 8 Panchayat MBRs. From P.Chettihalli Sump, water is conveyed by pumping to 17 Panchayat MBRs and Marandahalli TP.

Tenderer

Chief Engineer, TWAD Board, Vellore

From Common sump at Moongilpatty water is conveyed to by series of Booster Pumping Stations at Mahendramangalam, Kaduchettipatti, Ullukurukkalai to Jakkari MBR. From Jakkari MBR water is conveyed by gravity to Kundumanahalli BPS. From Kundumanahalli BPS water is conveyed by pumping to Mathagiri BPS and Thinnur Union MBR. From Thinnur Union MBR water is conveyed by gravity to Hosur Municipality, 4 Panchayat MBRs in Shoolagiri Union, 9 Panchayat MBRs in Hosur Union and to Booster Sump at Badethepally. From Badethepally Sump water is conveyed by pumping to 7 Panchayat MBRs of Hosur Union and 26 Panchayat MBRs / Sump of Shoolagiri Union. From Kaduchettypatty BPS water is conveyed by gravity to 5 Panchayat MBRs of Karimangalam Union. From Kaduchettypatty BPS water is conveyed by Pumping to Rayakottai MBR. From Rayakottai MBR water is conveyed by Gravity to 8 Panchayat MBRs in Kelamangalam Union, 10 Panchayat MBR's in Shoolagiri Union and 27 Panchayat MBRs/Sumps in Vappinapalli Union. From Jakkery MBR water is conveyed by Gravity to 2 panchayat MBR's of Shoolagiri Union, 20 panchayat MBR's/Sump of Kelamangalam Union, and 22 panchayat MBR's/Sump of Thalli Union, Kelamangalam TP and Thenkanikottai TP. From Mathigiri BPS water is conveyed by pumping to 10 panchayat MBR's of Hosur Union, 28 panchayat MBR's of Thalli Union.

From Common sump at Moongilpatty water is conveyed by pumping to Karimangalam Union MBR and BPT at Kalkuttapatty. From Karimangalam Union MBR water is conveyed by gravity to Karimangalam TP, 23 Panchayat MBRs/Sump and one sump near MBR. From this sump near the MBR, water is conveyed by pumping to 3 Panchayat MBR's of Karimangalam union. From Kalkuttapatty BPT water is conveyed by gravity to Kaveripattinam TP, Nagojanahalli TP and 35 Panchayat MBRs and 4 panchayat sumps of Kaveripattinam Union. One panchayat INW is directly linked to ITM in Kaveripattinam union. From Kalkuttapatty BPT water is conveyed by gravity to BPS at Avathanapatty, P.Muthur Panchayat MBR of Krishnagiri Union, Krishnagiri Municipality, Kandhikuppam BPS, 2 BPS of Bargur TP and BPS at Karakuppam. From BPS at Avathanapatti water is conveyed by pumping to 21 panchayat MBR's and 9 panchayat sumps of Krishnagiri union. From BPS at Kandhikuppam water is conveyed by pumping to 4 Panchayat MBR's of Bargur union. From 2 BPS of Bargur TP water is conveyed to OHT's of Bargur TP by pumping. From Karakuppam BPS water is conveyed by pumping to Bargur union MBR at Kotlatti. From Kotlatti MBR water is conveyed by gravity to BPS at Chinthagampalli. From BPS at Chinthagampalli water conveyed to 2 panchayat sumps and 2 panchayat MBR's of Bargur union. From Union MBR at Kotlatti water conveyed by gravity to 29 panchayat MBR'S and 4 panchayat sumps of Bargur union. From panchayat MBR's water conveyed mostly by gravity to OHT's of habitations and in few cases by pumping through intermediate INW sumps. Thus from the MBR at Madam, water is conveyed through a network of Transmission Main, Feeder Mains, Internal Transmission Mains and Internal Networks of about 10,109 km length of pipes spread over Dharmapuri and Krishnagiri districts.

Scope of Bid

1.1 The Chief Engineer, TWAD Board, Vellore (hereinafter referred as "Employer" in these documents) invites bids for the Operation and Maintenance of works (as defined in these documents and referred as "the works") as detailed in the Bill of Quantities. The bidder shall offer their/his price for all the items of works detailed in the Bill of Quantities

NAME OF WORK:

"Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) - 3rd call - Package I"

Package I comprises intake works and raw water pumping station upstream of Hogenakkal falls in river Cauvery, at site located 45 km west of Dharmapuri. Raw water pipeline of 6.15 km length connects the raw water pumping station and the Water Treatment Works with treated water output handling capacity of 155.82 MLD by running the whole Works (including all duty raw water and treated water pumps) for 23 hours. The treated water is pumped through the treated water pumping main of length 1.567 km to the inlet sump of the Booster Pumping Station and then to Madam Master Balancing Reservoir for a distance of 3.422 km. The Supervisory Control And Data Acquisition System (SCADA System) and the communication network were installed in Raw Water Pumping Station, Water Treatment Plant, Booster Pumping Station, Master Balancing Reservoir at Madam and Tapping Points, Union reservoirs and BPS at 74 locations under Packages II, III, IV and V.

Sl.No.	Description	Unit	Quantity
I	Pipeline		
A	Raw water Pumping Main		
	1500mm Dia. MS Pipe of 10mm thick	km	6.150
B	Treated Water Pumping Main		
	1500mm Dia. MS Pipe of 14 mm thick	km	1.567
C	Booster Pumping Main		
	1500mm Dia. MS Pipe of 11 mm thick	km	3.422
II	Civil Structures		
A	Intake structure at Hogenakkal	No.	1
B	Water Treatment plant-160MLD capacity	No.	1
C	Booster Pumping Station	No.	1
D	Master Balancing Reservoir-240LL Capacity	No.	1

1.1.1. List of Major Vertical Turbine Pumpsets

Sl.No	Location	Nos.	Discharge in LPM	Head in m	Power in kW	Total power in KW
1	Intake	4+2	29133	74.5	480	2880
2	Water Treatment Plant	4+2	28783	145	930	5580
3	Booster Pumping Station	4+2	28783	100.50	640	3840

1.1.2. List of Transformers in Raw Water Pumping Station

Sl.No	Make	Makers Sl.No	Capacity in KVA	Voltage Ratio
1.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16933/1	3150	33KV/6900V
2.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16933/2	3150	33KV/6900V
3.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18871/1	100	6.9KV/433V
4.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18871/2	100	6.9KV/433V

1.1.3. List of Transformers in Water Treatment Plant

Sl.No	Make	Makers Sl.No	Capacity in KVA	Voltage Ratio
1.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 21799/1	6300	33KV/6900V
2.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 21799/2	6300	33KV/6900V
3.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16932/1	800	6.9KV/433V
4.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16932/2	800	6.9KV/433V
5.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18870/1	160	6.9KV/433V
6.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18870/2	160	6.9KV/433V

1.1.4. List of Transformers in Booster Pumping Station

Sl.No	Make	Makers Sl.No	Capacity in KVA	Voltage Ratio
1.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16934/1	4000	33KV/6900V
2.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 16934/2	4000	33KV/6900V
3.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18871/3	100	6.9KV/433V
4.	VOLTAMP TRANSFORMERS LTD, VADODARA, GUJARAT, INDIA.	JN 18871/4	100	6.9KV/433V

1.1.5. Supervisory Control and Data Acquisition (SCADA)

The entire system starting from Intake, Raw Water Transmission main, various units and processes at WTP, Treated Water Pumping to BPS, level and flow at BPS, level and flow in MBR are monitored and controlled at Central Control Room of WTP. Data from Intake, WTP, BPS and MBR are communicated to Central Control Room of WTP through fibre optic cable.

Through the SCADA System, the levels in the union reservoirs, the flow/volume of water delivering from the tapping point branches to the union reservoirs, major booster pumping stations of Package II to V received at the Central Control Rooms (CCR) at the filter building of the Water Treatment Plant.

Treated water quality

When operated in accordance with the Contractor's instruction at flows up to the required maximum throughput, the water treatment works treating raw water from the River Cauvery shall be capable of producing a reliable and continuous supply of potable water free of waterborne pathogenic organisms. The water quality from the works sampled after treatment at the treated water reservoir outlet or as otherwise stated shall comply with the following standards:

(a) 100% of the sample results shall have:

Turbidity	:	Not exceeding 1.0 NTU**
Taste and odour	:	Unobjectionable
Colour	:	Not exceeding 5° Hazen
Aluminium	:	Not exceeding 0.2 mg/l as Al
Iron	:	Not exceeding 0.3 mg/l as Fe
Manganese	:	Not exceeding 0.1 mg/l as Mn
Free chlorine	:	Not less than 0.5 mg/l*
pH	:	7.0 to 8.5
Phosphate	:	Nil
Ammonia	:	Nil
Total coliform bacteria	:	Nil in any 100 ml sample

*At the contact tank outlet ** Before final pH correction

(b) 95% of the sample result shall have:

Aluminium	:	Not exceeding 0.03 mg/l as Al
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Tenderer

Chief Engineer, TWAD Board, Vellore

Iron	:	Not exceeding 0.1 mg/l as Fe
Manganese	:	Not exceeding 0.05 mg/l as Mn
pH	:	pHs + 0.3; pHs being the saturation pH value.
Phosphate	:	Nil
Ammonia	:	Nil

1.1.6. UGSS to Hogenakkal Village

Hogenakkal village is one of the famous tourist place in Dharmapuri District and more number of Lodges are available. Previously the wastewater, storm water, and sullage flow from House hold and lodges of Hogenakkal village was directly drained into the river Cauvery in the upstream of the intake structure of Hogenakkal Water Supply and Fluorosis Mitigation project which might have caused pollution to the raw water at intake works. To prevent pollution in river Cauvery at intake, the UGSS for Hogenakkal village has been executed and in the UGSS the following components are functioning now.

1. Collection System (200mm UPVC pipe)	-	1566m
2. RCC Manholes	-	58 Nos
3. Lifting station (Screen well, Grit well & Suction well)	-	1 No
4. Pump room (6.0m x 4.0m)	-	1 No
5. Pumping Main (150mm CI LA Class pipe)	-	570m
6. 0.35 MLD STP – FBBR (Fluidized Bio Bed reactor)	-	1 No
7. 62.50 KVA Diesel Generators -	-	2 Nos

Treated Sewage Standards has to be maintained as per Pollution Control Board Norms and disposal has to be done as per TNPCB approval.

pH	:	5.5 to 9
Biochemical Oxygen Demand (BOD) mg/L	:	≤ 20
Chemical Oxygen Demand (COD) mg/L	:	≤250
Total Suspended Solids mg/L	:	≤30

MAINTENANCE

1.2 Operation and Maintenance of the above works for a period of 48 months

1.3 The successful bidder has to Operate and Maintain the above works for a period of 48 months

1.4 In these bidding documents, the terms bid and tender and their derivatives (bidder/tenderer, bid/tender, bidding/tendering etc) are synonymous.

1.5 Downloading the documents from web site.

If the documents are downloaded from the web site www.tenders.tn.gov.in & www.twadboard.tn.gov.in by the bidder and offer their tender duly filled and signed along with all required documents to the tender inviting authority as notified in the Invitation for Bids subject to the following:

a) The bidder shall furnish a certificate to the effect that no correction/ alteration on the bid document as found in the web site was made by him and he shall abide by all the terms, conditions and specifications contained in the bid document.

Tenderer

Chief Engineer, TWAD Board, Vellore

b) No cost towards bid document shall be required to be paid by the bidders who are using the forms downloaded from the designated website.

The bidder shall submit the tender to the tender inviting authority as prescribed in the "Invitation of Bids".

1.6 The Bid Document can be purchased from the Executive Engineer, TWAD Board, Project Maintenance Division, Hogenakkal Project House Campus, A.Jettihalli (P.O), Dharmapuri-636807 by remitting the required cost of Bid Document as stipulated in "Invitation of Bids".

2. Method of Bidding

2.1 If the bid is made by an individual, the bid documents shall be signed by the individual with his full name and current address.

2.2 If the bid is made by a proprietary concern, the bid documents shall be signed by the proprietor with his full name as well as the name of the firm and full address. In the case of an authorised person holding power of attorney signing the bid documents, a certified copy of the registered power of attorney should accompany the bid documents. The signature of the proprietor shall be attested by a notary public and enclosed as documentary evidence.

2.3 If the bid is made by a partnership firm, the bid documents shall be signed by all the partners of the firm along with their full names and current address with specific mention on the registered address of the firm. In the case of a partner holding power of attorney signing the bid documents, a certified copy of the registered power of attorney should accompany the bid. It is also mandatory to furnish a certified copy of the registered partnership deed, current address of the partners, registered address of the firm along with the bid. The signature of all the partners / power of attorney shall be attested by a notary public and enclosed as documentary evidence.

2.4 If the bid is made by a limited company or a limited corporation, it shall be signed by a duly authorised person holding power of attorney for signing the bid documents in which case a certified copy of the registered power of attorney shall accompany the bid. Such limited company or corporation may be required to enclose satisfactory evidence of its existence along with the bid.

2.5 The bids from the contractors / firms shall be accompanied by an attested copy of the Income Tax Clearance Certificate relating to the year prior to the previous financial year (with reference to the year in which the bid is opened) and GST Registration Certificate.

2.6 If the bid made by a limited company or corporation, it shall be signed by a duly authorized person holding power of attorney for signing the bid documents in which case a certified copy of the registered Power of attorney along with still in force certificate shall accompany the bid.

3. Modification or more than one tender

3.1 A Tenderer may submit a modified Tender before the last date for receipt of Tender. Provided that where more than one Tender is submitted by the same Tenderer, the **lowest eligible financial tender** shall be considered for evaluation.

4. Cost of Bidding

4.1 The bidder shall bear all the costs associated with the preparation and submission of his bid. The Employer will in no case be responsible for those costs, regardless of the conduct or the outcome of the bidding process.

5. Site Visit.

5.1 The bidder, at the Bidder's own responsibility and risk is advised to visit and examine the site of works and its surroundings and obtain on his own all information that may be necessary for preparing the bid and entering into contract for the operation and maintenance of the works. The costs of visiting the site and its surroundings shall be at the bidder's expense.

5.2 The bidder and any of his personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the bidder, his personnel or agents, will release and indemnify the Employer and his personnel or agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs and expenses incurred as a result of the inspection.

5.3 The bidder should carefully inspect the site to assess the topography of the area where the pipe line and all the structures that are to be maintained as in the scope of the contract, to have an idea of the extent of area.

5.4 The employer will arrange a site visit for the bidders based on their request to enable the bidders to have an understanding of the site conditions and will be able to clarify those associated issues relating to the site conditions in the pre-bid meeting. The site visit will be commenced from the premises of the office of the Executive Engineer, TWAD Board, Project Maintenance Division, Hogenakkal Project House Campus, A.Jettihalli (P.O), Dharmapuri-636807. The bidder has to make his own arrangements for the site visit.

B. Eligibility / Qualification Criteria

6. Eligible Bidders

- 6.1 The Invitation to Bid is open to any bidder meeting the following requirements:
- 6.2 A bidder shall not be associated directly or indirectly with the firm engaged by the Board for providing consultancy services for the preparation and supervision of the works and any of its affiliates.
- 6.3 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer as the Employer shall reasonably request.
- 6.4 Joint Venture of firms for bidding are not allowed.
- 6.5 The contractors under Defects Liability Period (DLP) of the Operation & Maintenance of HWS & FM Project is allowed to bid under the condition that "while handing over of this package works, any repairs listed to be carried out are to be rectified by the original contractor at his own cost. No payment will be made for the rectification works including all cost of spares and other related items required. The defects are to be rectified within the time frame mentioned in the "Special conditions of Contract" and on default, Liquidated damages and penalty will be imposed as mentioned in the "Special conditions of Contract".

7. Qualification of the Bidder

7.1 General

- 7.1.1 Bidders shall provide the following as part of their bid in the prescribed formats.
- 7.1.2 A registered Power of Attorney authorising the signatory of the bid to commit on behalf of the bidder should be enclosed.
- 7.1.3 Proof of Registration of the firm/company under the Companies Act should be enclosed.
- 7.1.4 Total monetary value of civil engineering works (water supply scheme completed / maintained water supply scheme works) performed during each of the last three financial years should be furnished in Annexure-I.
- 7.1.5 Average Annual construction turnover in Civil Engineering works (water supply scheme completed / maintained water supply scheme works) for the last three financial years (Audited balance sheet for the last three financial years) should be enclosed. Annual turnover (in the form of Annexure II) for the last three financial years should be certified by a registered Chartered Accountant and the certificate should be affixed with the seal of the office of the Chartered Accountant with the registration number legibly in Annexure – II.
The contract receipt / contract income of the audit profit and loss account or audited income and expenditure account shall only be considered for the purpose of annual Turnover in Civil engineering works (water supply scheme completed / maintained water supply scheme works) for the last three financial years.
- 7.1.6 Experience in works of similar nature and magnitude within a period of 5 years, commitment of works on hand and works for which bid already submitted should be furnished in the Annexure – III, IV and V respectively.
- 7.1.7 List of equipments available with the bidder for deployment in the project should be furnished in Annexure-VI.

- 7.1.8 Technical, administrative and managerial personnel proposed to be employed for key site management in this work with their qualification details should be furnished in Annexure – VII
- 7.1.9 Evidence of access to lines of credit and availability of other financial resources, Credit line certificates from financial institutions should be enclosed in Annexure – VIII
- 7.1.10 Litigation details of the bidder with the details of the parties concerned and the amount involved should be furnished in Annexure – IX.
- 7.1.11 The bidder should declare clearly whether the bidder has been black listed, banned or debarred in Central Government Department / Under taking / Organisation or any State / Union Territory / Department Undertaking / organisation in Annexure – X.
- 7.1.12 Subletting of works are not allowed.
- 7.1.13 Income Tax Clearance Certificate in currency as proof of having remitted the income tax for the year prior to the previous financial year (with reference to the year in which the bid is opened)
- 7.1.14 GST Certificate as proof of having remitted the GST. In the case of, not liable to the Commercial Tax Department, a valid certificate issued by the competent authority to this effect.
- 7.1.15 List of Bank guarantee if any in other contracts in any other Department/ Corporation/ any concern.

CONDITIONS TO BE SATISFIED:

7.2 **Performance Eligibility:**

(a) Financial & Physical capacity:

Sl. No	Description	Criteria
	Financial Turnover & Cash flow.	
a	Minimum Annual Turn Over in any one of the last Three financial years (2016-17, 2017-18 & 2018-19)	Rs.22.00 Crore
b	Minimum Cash Flow: Minimum Cash flow required	Rs.1.37 Crore
c	Financial Turn Over in Similar Works : The bidder should have Satisfactorily - Completed Water Supply Scheme or Maintained Water Supply Scheme of value not less than Rs.22.00 Crores in the last five financial years (2014-15 to 2018-19) either a) in single agreement or b) in two agreements	Rs.22.00 Crore Rs.33.00 Crore
d	Bid capacity The available Bid capacity	Rs. 22.00 Crore
	Physical Work Experience in the Five financial years (2014-15 to 2018-19)	

e	Construction of Collection Well/ Infiltration Well / Intake Well / Jack Well/ Off take arrangements: Minimum experience in Construction of --- number Collection Well/ Infiltration Well / Intake Well / Jack Well / off take arrangements should have Completed or Maintained for a continuous period of at least 1 year in the last five years.	1 No.
f	Full Scale Water Treatment Plant in Million Litres per day (MLD): Minimum Aggregate Experience of Full Scale Water Treatment Plant - Completed or maintained for a continuous period of at least 1 year in the last five years.	(a) 32 MLD. (b) Out of which Minimum 1 number of 15 MLD Capacity and above
g	MS/DI/CI Pipeline in Kilometre (KM): Minimum Aggregate experience of pipeline in KM - MS/DI/CI Pipe - Should have supplied, laid, jointed, tested and satisfactorily completed or maintained for a continuous period of at least 1 year in the last five years	1.12 KM
h	PUMPING MACHINERY INSTALLED IN KILO WATT (KW): Minimum aggregate capacity of pumping machineries installed (KW), erected, tested and successfully completed or maintained for a continuous period of at least 1 year in the last 5 years	(a) 2460 KW in Vertical Turbine and Centrifugal pumpset. (b) Out of which, Minimum 1 number of 112 KW (150 HP) and above Vertical Turbine / Centrifugal Pump set.
i	TRANSFORMER SUB STATION Minimum aggregate experience of transformer sub-station erected, tested and completed or maintained for a continuous period of at least one year in the last 5 years	1 No. of 500 KVA of Transformer Substation

Note: in addition to the above requirements the following criteria is also to be satisfied.

(b) Bid capacity:

The available bid capacity should be more than the average annual bid value.

Assessed Available Bid capacity = **(A*N*1.5-B)**, where

A= Maximum value of Civil Engineering works executed or Maintained in any one year during the last three financial years (updated to current price level @ 6% per annum) taking into account the completed as well as works in progress.

N= Number of years prescribed for completion of the works for which bids are invited i.e., **4 Years**

B= Value of existing commitments and ongoing works to be completed during the next **4 Years** (updated to current price level)

7.3 The Goods offered should be of acceptable quality and standard. Unless otherwise stated in the Contract, the Accepted Contract Amount covers the entire Contractor's works under the Contract (including those under Provisional Sums, if any) and all things necessary for the operation and maintenance of the Works. The Accepted Contract Amount shall cover the completion of operation and maintenance of the Works.

Note:

- i. The performance eligibility shall pertain to the similar works executed by the tenderer in any of the Central/State Government Departments/Quasi Government Organizations and Government Undertakings/a Private Organization. The performance experience for Central/State Government Department/Undertaking/ Quasi Government Organization should be supported by performance certificates issued by the concerned organization by an officer not less than the rank of Executive Engineer. The experience certificates issued by an officer below the rank of Executive Engineer or on behalf of Executive Engineer will not be considered.
- ii. In case of experience of a Private Organization, the following criteria should be satisfied:
 - a) The Photographs of the works undertaken for the Private Organization should be enclosed as a proof.
 - b) The certificate of the work done for the Organization be enclosed by a Senior Official who should be at least of the rank of the General Manager or Equivalent.
 - c) The above certificate should be countersigned by a Government Department Engineer at least of the rank of Assistant Executive Engineer and should also be notarised.
- iii. For the experience certificates furnished by the bidders which are obtained from the Departments outside the State, clarification will be obtained by the Employer from the concerned Department as to whether the details furnished in the certificates are genuine, before finalization of evaluation
- iv. In case if a contractor/firm worked as sub contractor previously, then their experience in those particular components of work will be considered only if their sub contract/sublet work was properly approved by the User Department. A certified copy to that effect from Engineer in charge (not below the rank of Executive Engineer) must be produced for arriving at the performance eligibility for the particular work.

7.4. Disqualification:

Even though the bidders meet the above qualifying criteria, they are subject to be disqualified at any point of time if they have

- i) made misleading or false representation in the form statements and attachments submitted and/or
- ii) Record of poor performance during the last 5 years as on the date of application such as abandoning the work, rescinding of contract for which the reasons are attributable to the non performance of the Contractor, inordinate delays in completion, consistent history of litigation awarded against the applicant or any of its constituents or financial failure due to bankruptcy etc.
- iii) been debarred / blacklisted as on the date of application by any Central/State Government Department/Undertaking/Organization and their bid will not be taken up for evaluation.
- iv) been referred to CDR and NCLT in the last 10 years and an appropriate certificate in this regard is to be furnished by self certification / banker certificate.
- v) If the (bidder/ company/ firm/ proprietor in name of/ wife/ siblings/ husband/ son/ daughter in law/daughters/ son in law) close blood relative are blacklisted by the Employer/ Central /State Government Department/undertaking/organization/ and their bid will not be taken up for consideration.
- vi) If the bidder fails to disclose (v) details and later came to understand by the employer severe Penalty will be imposed irrespective of amount and blacklisted by the employer.

SPECIAL ATTENTION TO BIDDERS.

I. Copies of experience certificates obtained from the Officer not below the Rank of **Executive Engineer** of respective user departments must be attested by Notary Public and produced.

II. These Certificates should contain the following details

- 1) Name of Scheme (Name of the State also to be specified) :
- 2) Contract No. and date :
- 3) Value of Contract : Rs.
- 4) Name of Contractor with full address :
- 5) Period of completion as specified in the Contract :
- 6) Date of commencement of work :
- 7) Actual date of completion/ commissioning :
- 8) Reason for the delay if any :
- 9) Full details of components :
executed under this contract

10) Performance of the work should contain the following details:-

Component	Performance
i) In case of Collection Well/ Infiltration Well / Intake Well / Jack Well/ Off take arrangements :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?
ii) In case of Pipeline work (Type of each pipe with dia, length, Pressure must be given) :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?
iii) In case of Service Reservoirs (with capacity of Service Reservoirs to be clearly mentioned) :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?
iv) In case of Water Treatment Plant (Capacity in..... MLD & type of Components) :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?
v) In case of pumping machinery installed (the capacity of KW must be given) :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?
vi) In case of transformer sub station (the capacity in KVA must be given) :	Whether completed and commissioned Satisfactorily or Maintained Satisfactorily?

Signature of Officer with Seal

C. BID DOCUMENTS

8. Contents of Bid Documents

- 8.1 The Bid Documents (Volume I) will comprise the following documents & addenda issued in accordance with clause 10 below:

Invitation for Bids

Instruction to Bidders

Eligibility/Qualification Criteria

Forms of Bid

Programme Schedule and Financial Milestone

Payment Schedule

General Conditions of the Contract

Special Conditions of the Contract

Estimated List of Spares (Mechanical, Electrical, ICA and Miscellaneous)

Model Formats

Forms of Agreement

- 8.2 General and Particular Specifications – Volume 2

- 8.3 Mechanical & Electrical & ICA Specifications – Volume 3

- 8.4 Civil Specification – Volume 4

- 8.5 List of Equipments – Volume 5

- 8.6 Drawings of structures and Installations– Volume 6

- 8.7 O&M Manual– Volume 7a & 7b

- 8.8 Bill of Quantities- Volume 8

9. Clarification of Bid Documents.

- 9.1 A prospective bidder requiring any clarification may raise the same at the time of Pre-bid meeting in writing or by cable (hereinafter the term cable is deemed to include telex and facsimile) at the employer's address indicated in the "Invitation of bids". The employer will respond to any clarification sought for.

10. Amendment to Bid Documents

- 10.1 At any time prior to 48 hours to the deadline for submission of bids, the Employer may amend the bid documents by issuing Addenda.
- 10.2 Any Addendum thus issued shall be part of the bid documents and shall be communicated in writing or by cable to all purchasers of the bid documents. Prospective bidders shall promptly acknowledge the receipt of each addendum by cable to the Employer.
- 10.3 To give prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer shall extend as necessary the deadline for submission of bids, in accordance with Clause 21.2 of "Submission of Bids".

D. PREPARATION OF BIDS

11. Language of the Bid

- 11.1 The bid and all correspondences and supporting documents related to the bid exchanged by the bidder and the Employer shall be written in English. Supporting documents and printed literature furnished by the bidder may be in other language provided they are accompanied by an accurate translation of the relevant passages in either English or Tamil language, in which case, for purpose of interpretation of the bid, the translation shall prevail.

12. Documents comprising the Bid

- 12.1 The bid submitted by the bidder shall comprise the following:

Cover – 1 (Technical Bid)

- i. The Bid Documents duly filled and signed
- ii. List of Annexures
 - a) Performance of the Bidder showing total monetary value of Civil Engineering works (completed or maintained water supply schemes) for the last three years (2016-17, 2017-18 & 2018-19) (7.1.4) (Annexure-I)
 - b) Average Annual Construction Turn over Civil Engineering works (completed or maintained water supply schemes) for the last three financial years (7.1.5) (Annexure-II)
 - c) Experience in works of similar nature of Magnitude within a period of last 5 financial years (2014-15, 2015-16, 2016-17, 2017-18 & 2018-19) (7.1.6) (Annexure-III)
 - d) Commitment of works on hand (7.1.6) (Annexure-IV)
 - e) Works for which Bids are already submitted (7.1.6) (Annexure-V)
 - f) List of Equipments available with bidder (7.1.7) (Annexure-VI)
 - g) Qualification/Experience of key personnel proposed for technical and administrative functions under this contract (7.1.8) (Annexure-VII)
 - h) Sample Format for evidence of access to or availability of credit facilities (7.1.9) (Annexure-VIII)
 - i) Details of Litigation if any (7.1.10) (Annexure-IX)
 - j) Declaration by the bidder pertaining to blacklisting/debarment etc., (7.1.11) (Annexure-X)
 - k) Format for O&M staff required for Operating Methodology (Annexure-XI)
 - l) Affidavit as an undertaking given by the Contractor should be certified by the Notary duly stamped on a Notaries Stamp (Annexure-XII)
- iii. List of Certificates.
 - a) Signature of the Proprietor or Proprietors attested by the Notary Public - (2.2)
 - b) Signature of all the Partners/Power of Attorney attested by the Notary Public – (2.3)
 - c) Registration of the firm, signature of the authorised person attested by the Notary Public – (2.4)

- d) A copy of the listed Power of Attorney authorising the signatory of the bidder – (7.1.2)
- e) Proof of Registration of firm/Company - (7.1.3)
- f) Audited Balance Sheets – (7.1.5)
- g) Credit line Certificate from Financial Institutions – (7.1.9) - Annexure-VIII
- h) Income Tax Clearance Certificate – (7.1.13)
- i) GST Registration Certificate – (7.1.14)
- j) Certificate of performance issued by not less than the rank of Executive Engineer / Responsible person of the private organization – (7.3)

Copy of Certificates furnished by the firm/contractor should be attested by the notary public.

- iv. General and Particular Specifications – Volume 2
- v. Mechanical & Electrical & ICA Specifications – Volume 3
- vi. Civil Specification – Volume 4
- vii. List of Equipments – Volume 5
- viii. Drawings of structures and Installations – Volume 6
- ix. O&M Manual – Volume 7a & 7b
- x. Bid Security
- xi. Any other material required to be completed and submitted by the bidders in accordance with these instructions.

Cover – II (Price Bid) – Volume 8

- 12.2 Priced Bill of Quantity duly signed.
- 12.3 The Bid should be submitted only in the original documents as issued by the Employer or as downloaded from the website. No alteration or correction should be made under any circumstances in the Bid Documents issued by the Employer (or) as downloaded from the website.
- 12.4 Conditional tenders are liable for rejection.

13. Bid Prices

- 13.1 The contract shall be for the whole works as described in sub clause (1.1), based on the priced bill of quantities submitted by the bidder.
- 13.2 The bidder shall fill in rates and prices and line item total (both in figures and words) for all items of works described in the Bill of quantities along with total bid price (both in figures and words). Items for which no rate or price is entered by the bidder will not be paid for by the employer when executed and shall be deemed covered by the other rates and prices in the bill of quantities. Corrections, if any, shall be made by crossing out and initialling.
- 13.3 Deleted.

- 13.4 The rates and prices quoted by the bidder or firm till the completion of the contract period and price adjustments are not allowed.

14. Currencies of Bid and Payment

- 14.1 The unit rates and the prices shall be quoted by the bidder entirely in Indian Rupees.

15. Bid Validity

- 15.1 Bids shall remain valid for a period not less than 120 days (**one hundred and twenty days**) from the date of opening of Technical Bid. A bid valid for a shorter period shall be rejected by the Employer as non responsive.
- 15.2 In exceptional circumstances, prior to expiry of the original time limit, the Employer may request the bidders to extend the period of validity for a specific additional period. The request and the bidder's response shall be made in writing or by cable. A bidder may refuse the request without forfeiting his bid security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend his bid security for the period of extension.

16. Bid Security

16.1 The bidder shall furnish, as part of his bid, as bid security of **Rs.16.50 Lakhs (Rupees Sixteen Lakhs and Fifty Thousand only)** duly pledged in favour of **the Executive Engineer, TWAD Board, Project Maintenance Division, Dharmapuri** in any one of the following forms

- Deposit call receipt / Fixed deposit receipt/ Bank Guarantee issued by Nationalised Bank / Scheduled Bank located in India or a Reputable Bank located Abroad, National savings certificate/Post office Savings Bank deposits.
- Unconditional Bank Guarantee in the prescribed format for the bid security issued by a Nationalised Bank/Scheduled Bank located in India or a Reputable Bank located Abroad & valid for 45 days after the end of the validity period of the bid.
- FDR and deposits at call receipts should contain lien certificate issued by the Bank for encashment by department. The FDR furnished by the firm should also bear the signature of the authorized signatory on a revenue stamp at the back of the FDR.

- 16.2.1 Any bid not accompanied by bid security in the stipulated form shall be rejected by the Employer as non responsive.

- 16.2.2 The Bid security (Bank Guarantee) issued by Bank will be conformed from the concerned Regional office.

- 16.3 The bid security of the unsuccessful bidders will be returned as promptly as possible, but not later than 30 days either after the expiration of the period of bid validity or after finalization of the bid whichever is later.

- 16.4 The bid security of the successful bidder will be returned after the bidder has furnished the required performance security and signed the agreement. No interest is payable on Bid security by the Employer.

- 16.5 The bid security shall be forfeited

- In the case of bidder withdrawing or modifying his bid during the period of bid validity
- If the bidder does not accept the corrections of the bid price, pursuant to clause 28 of Bid Opening and Evaluation

- In the case of a successful bidder, failing to furnish the performance security in the specified form within the stipulated time
- In the case of a successful bidder, failing to enter into agreement within the stipulated time
- In the case of the bidder severing the conditions, after intimation of the acceptance of the bid.

17. Compliance to Technical Design and Specification - Deleted.

18. Format and Signing of Bid

- 18.1 The bid document submitted to the Employer shall be typed or written in indelible ink and shall be signed by a person duly authorised to sign on behalf of the bidder in accordance with "Instructions to Bidders". All pages of the bid and where entries or corrections have been made shall be initialled by the person signing the bid.
- 18.2 The bid shall contain no alteration or additions, except those to comply with the instructions issued by the Employer and wherever necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person signing the bid.
- 18.3 The technical and price bids (BOQ) as issued by the Employer should be submitted duly signed at the bottom of each page, failing which the bids will be summarily rejected.

19. Pre Bid Meeting:

- 19.1 The bidder or his authorised representative, who are desirous, may attend the pre bid meeting which will take place at **Office of the Chief Engineer, TWAD Board, No. 8, 1st East Main Road, Gandhi Nagar, Vellore – 632006** on **11.02.2020 at 11.30A.M.**
- 19.2 The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 19.3 The bidder is requested, as far as possible, to submit the questions in writing or by cable, to reach the Employer not later than one week before the meeting. It may not be practicable at the meeting to answer questions received late.
- 19.4 Minutes of the meeting, including the text of the questions (without Identifying the source of enquiry) and the responses given together with any responses prepared after the meeting, will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in clause 23.1 of "Submission of Bids", which may become necessary as a result of the pre bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to clause 10 of the Bid Document and not through the minutes of the pre bid meeting. Then will be hosted on www.tenders.tn.gov.in and www.twadboard.tn.gov.in
- 19.5 Attendance at the pre bid meeting is not mandatory and non attendance will not be a cause for disqualification of the bidder.

E. SUBMISSION OF BIDS

20. Sealing and Marking of Bids

- 20.1 Two cover system shall be adopted for submission of bids.
- 20.2 The first cover shall contain the technical bid documents, supporting material relating to the eligibility criteria, Bid Security in the proper form and other connected Certificates as specified in clause 12.1.
- 20.3 No indication direct or indirect, implicit or explicit regarding the rates and prices should be made in the technical bid or any other documents submitted in the first cover.
- 20.4 The second Cover shall contain the Price Bid alone.
- 20.5 The bids should be submitted in the original bid documents as issued by the Employer.
- 20.6 The bid documents, under no circumstances, are transferable.
- 20.7 The first cover containing the Technical Bid and Bid Security and the second cover containing the Price Bid, should be pasted properly, sealed and superscribed indicating clearly the name of work and marking specifically as under:

Cover I - Technical Bid

Cover II - Price Bid

Both the covers containing the Technical bid and Price Bid should be placed in a common envelope, pasted, sealed and super-scribed properly.

20.8 Format and signing of Tender

- 20.8.1 The Tenderer shall submit one original and one copy (hard) and one soft copy of Technical Bids comprising of Tender as described in the Instruction to Tenderers, bound in a format as stipulated and clearly marked as "ORIGINAL" and "COPY" as appropriate and the bidder shall affix his signature in all pages of his submittal. In the event of discrepancy, original will prevail.
- 20.8.2 All bidders will be provided with an electronic copy of the schedule of prices. Cells that contain permanent information and are not to be changed by the Bidder will be protected.
- 20.8.3 Cells into which the bidder can enter rates and Amount (where these may vary), will be left unprotected. However, the Employer will not enter any formulae in the spread sheets.
- 20.8.4 The Bidder is entirely responsible to ensure that the calculations presented in the Schedule of Prices are correct, and that the Bidders offer is complete in all respects. The Price Bid completed in computerized printout, adopting the format of the Bid document in total and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder.
- 20.8.5 **The tenderer shall submit the Price Bid in duplicate one in hard copy and another in soft copy. The BOQ in the excel format is uploaded.** The Bidder will need to submit the completed Schedule of Prices together with the bound copy of the Price Proposal which has been issued by the Employer along with the separate Priced Schedule of Prices, and to affix his signature on all pages of his submittal. The Bidder shall give an undertaking that that the content of the CD and the content of hard copies are identical. In the case of discrepancy between the

soft copy and hard copy (print out) furnished by the bidder, the hard copy (print out) will prevail. If there is discrepancy between the hard/soft copy furnished by the bidder and the hard copy issued by the Employer, the hard copy issued by the Employer will prevail.

- 20.8.6 The Tender shall contain no alternations, omissions or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialled by the person or persons signing the Tender.
- 20.9 All the envelopes shall be addressed to the Employer "THE CHIEF ENGINEER, TWAD BOARD, VELLORE – 632 006" and bear the following identification

Bid for

Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) – 3 rd call - Package I

INVITATION FOR BID No.23 /Hog Pkg I to V /3rd call /DO/CE/ VLR / 2020 / Dated:23.01.2020.

Do Not Open Before	27.02.2020 at 03.30 PM	(Time and date of bid opening as per Clause 24 of Bid Opening and Evaluation)
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and should be submitted to the following Address:

**The Chief Engineer,
TWAD Board,
NO. 8, 1st East Main Road,
Gandhi Nagar,
Vellore – 632 006.**

- 20.10 In addition to the Identification required in sub clause above, the envelope shall indicate the name and address of the bidder to enable the bid to be returned in case it is declared late, pursuant to Clause 22 of "Submission of Bids".
- 20.11 If the envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

21. Deadline for Submission of the Bids

- 21.1 Bids must be received by the Employer at the address specified in clause 20.9 above not later than 3.00 PM on 27.02.2020 In the event of the specified date for the submission of bids declared a holiday for the Employer, the bids will be received upto the appointed time on the next working day.
- 21.2 The Employer may extend the deadline for the submission of bids by issuing amendment in accordance with clause-10 of Bid Documents in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will then be subject to the new deadline.

22. Late Bids

- 22.1 All bids received by the Employer after the deadline prescribed in clause 21 of "Submission of Bid" will be returned unopened to the bidder.

23. Modification and Substitution of Bids

- 23.1 No Tenderer shall be allowed to withdraw the Tenders after submitting the Tender. The bidder may modify, substitute his bid after submission, provided that written notice of the modification / substitution is received by the Employer prior to the deadline for submission of bid.
- 23.2 The bidder's modification/substitution notice shall be prepared, sealed, marked and delivered in accordance with provisions of clause 20 and 21 of "Submission of Bid", with the envelope additionally marked "MODIFICATION" / "SUBSTITUTION" as appropriate. The modification / substitution for price bid cover should be super scribed as PRICE "MODIFICATION" / "SUBSTITUTION" COVER.
- 23.3 No bid shall be modified or substituted after the deadline for submission of bids.
- 23.4 Modification and substitution of a bid between the deadline for submission of bids and the expiration of the original period of validity specified in clause 15.1 of "Preparation of Bids" or as amended pursuant to clause 15.2 of "Preparation of Bids" may result in the forfeiture of the Bid Security pursuant to Clause 16 of "Preparation of Bids".

F. BID OPENING AND EVALUATION

24. Bid Opening

- 24.1 The Employer will open all the bids received (except those received late) including modifications made pursuant to clause 23 of "Submission of Bids", in the presence of the bidders or their representatives who choose to attend on the date at the time in the address specified in clause 20 of "Submission of Bids". (In the event of specified date of bid opening being declared a holiday for the Employer, the bids will be opened at the appointed time and location on the next working day).
- 24.2 Envelopes marked "substitution" and "modification" shall be opened and read out first. Envelopes super scribed as "MODIFICATION" / "SUBSTITUTION" to price bid will be opened at the time of opening of the price bid.
- 24.3 The Bidders' names, the Bid prices, the total amount of each Bid, any discounts, bid modification, substitution, the presence or absence of Bid Security and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening. Bids (and modifications) sent pursuant to clause 22 of "Submission of Bids" that are not opened and read out at the bid opening will not be considered for further evaluation regardless of the circumstances.

25. Process to be Confidential

- 25.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process until the award to the successful Bidder has been announced. Any effort by a bidder to influence the Employer's processing of Bids or award decisions may result in the rejection of his bid.

26. Clarification of Bids.

- 26.1 To assist in the examination, evaluation and comparison of bids, the Employer may, at his discretion, ask any Bidder for clarification of his bid, including breakdown of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids in accordance with Clause 28 of "Bid Opening and Evaluation".

27. Examination of Bids and Determination of Responsiveness

- 27.1 Prior to detailed evaluation of Bids, the Employer will determine whether each Bid (a) meets the eligibility criteria set out in clause (7) ; (b) has been properly signed, (c) is accompanied by the required securities and (d) is substantially responsive to the requirements of the Bid Documents,
- 27.2 A substantially responsive Bid is one which conforms to all the terms, conditions and specifications of the Bid Documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality or performance of the works. (b) which limits in any substantial way, inconsistent with the Bid Documents, the Employer's rights to the Bidder's obligations under the contract, or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive Bids.
- 27.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non conforming deviation or reservation. The decision of the Employer on the issue whether the Bid is responsive or not will

be final and binding on the bidders. The Employer is not bound to disclose the reason in case a bid is determined by him as non responsive.

28. Correction of Errors

- 28.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic error. Errors will be corrected by the Employer as follows:
- If any variation in the rates in words and figures, the lesser of the two will only be taken into consideration.
 - Where there is a discrepancy between the unit rate and line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.
 - Where there is an arithmetical discrepancy in the page total as well as grand total, the corrected total by the Employer will govern
- 28.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount of the Bid, his bid will be rejected and his bid security may be forfeited in accordance with Clause 16.5 of "Preparation of Bids".

29. Evaluation and Comparison of Bids

- 29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 27 of "Bid Opening and Evaluation".
- 29.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid price as follows:
- making any correction for errors pursuant to Clause 28 of "Bid Opening and Evaluation" **or**
 - making appropriate adjustments to reflect discounts or other price modifications offered in accordance with Clause 23 of "Submission of Bids".
- 29.3 The Employer reserves the right to accept or reject any variation/deviation.
- 29.4 If the Bid of a successful Bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract, the Employer may require the Bidder to produce detailed price analysis for any or all items of the Bill of Quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed.

After evaluation of the price analysis, the Employer may require that the amount of the Performance Security set forth in Clause 34 of "Award of Contract" be increased at the expense of the successful Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract.

G. AWARD OF CONTRACT

30. Award Criteria.

30.1 Subject to Clause 29 of "Bid Opening and Evaluation", the Employer will award the contract to the Bidder, whose Bid has been determined to be substantially responsive to the Bid Documents and who has offered the lowest evaluated Bid Price, provided that such Bidder has been determined to be (a) eligible in accordance with the provision of clause 6 of "Eligibility/Qualification Criteria" and (b) qualified in accordance with the provisions of Clause 7 of "Eligibility/Qualification Criteria".

31. Employer's Right to Accept any Bid and to Reject any or all Bids

31.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

32. Notification of Award

32.1 The Bidder whose Bid has been accepted will be notified of the award by the Employer prior to expiration of the Bid validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance"), will state the sum that the Employer will pay to the contractor in consideration of the execution and completion of Operation and Maintenance of works by the Contractor as prescribed by the Contract (hereinafter and in the conditions of Contract called the "Contract Price").

32.2 The notification of award will constitute the formation of the Contract.

33. Registration in TWAD Board

33.1 The successful contractor/firm, if not a registered contractor in Tamil Nadu Water Supply and Drainage Board, he / they shall get himself / themselves registered in TWAD Board.

34. Performance Security

34.1 A) Within 28 days from the date of the Letter of Acceptance, the successful bidder shall deliver to the Employer a Performance Security deposit for an amount **equivalent to 5% of contract value.**

i) 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, TWAD Board, Project Maintenance Division, Dharmapuri

or

ii) Unconditional and irrevocable bank guarantee issued by any one of the branches of "Nationalised Bank or scheduled Bank" within the State of Tamilnadu, provided they are in Prescribed format in favour of the Executive Engineer, TWAD Board, Project Maintenance Division, Dharmapuri.

34.2 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.

34.3 The Bid security (Bank Guarantee) issued by Bank will be conformed from the concerned Regional office.

35. Signing of Agreement

35.1 The Employer on receipt of the performance security and non-judicial stamp paper, will furnish to the bidder the Agreement in the form prescribed, incorporating all terms and conditions between the Employer and the successful bidder.

- 35.2 The Bidder should remit the performance security prescribed by the Employer in the form as in Clause 34 above and sign the agreement in the presence of the Employer within 28 days from the date of Letter of Acceptance notifying the award of contract.
- 35.3 Upon furnishing the performance security by the successful bidder, the Employer will promptly notify the other bidders that their bids have been unsuccessful.
- 35.4 Failure of the successful bidder to comply with the requirements of Clause 34 and 35.2 of "Award of Contract" shall constitute a breach of contract, cause for annulment of the award, forfeiture of the bid security and any such other remedy the Employer may take under the contract

35.5 **Amendment to Agreement**

Any amendment shall be issued by mutual consent between the Employer and the contractor only without any contrary to the bid conditions.

36 **Mobilization Advance**

- 36.1 Mobilization advance will not be provided by the Employer.

37. **Forfeiture of Performance Security**

- 37.1. The performance security is liable to be forfeited in cases where the firm/contractor fails to carry out the work in accordance with the specifications, terms and conditions of the contract leading to termination of the contract.

IV. PROGRAMME SCHEDULE

38. Project Maintenance mile stone

- 38.1. The twenty eighth day from the date of issue of work order shall be reckoned as the start date of the contract period. If any dispute arises, the decision of Engineer is final.
- 38.2. Insurance for the assets of TWAD Board, handed over to the contractor for operation and maintenance to provide water supply to the beneficiaries, contractor's operating and supervisory staff, third party, Employer's personnel and the Employer's risk should be taken **from the start date of contract period** of works for O&M and documents to be submitted within 15 days of issue of work order. This should be renewed every year without any lapse till the period of completion. The loss to the property or life, if any, due to default of insurance, will have to be suitably compensated at Contractors own cost and risk as per the rules in force or as ordered by the court of law and TWAD Board will not take any responsibility in such cases.
- 38.3 The Maintenance period is up to 31.03.2024 and the defects liability period is 3 months thereafter.
- 38.4 Entire operation and maintenance of works under this package shall be carried out without omission in compliance with the operation and maintenance manuals, Civil, Electrical, Mechanical and ICA specifications which forms part of this contract and special conditions of Operation and maintenance works. Above shall be carried out upto 31.03.2024 which is the date of completion of this operation and maintenance contract.

39. Programme Schedule / Rate of Progress / Milestone

- 39.1. The Contractor, within 28 days from the date of issue of work order take over the site.
- 39.2. a. Daily water supply to the beneficiaries based on design quantity should be achieved or as directed by Engineer in charge in writing.
 b. Purchase of spares for 6 months requirement well in advance. Prior approval of the Engineer is mandatory for purchase of any spares.
 c. Preventive measures should be done as per O&M manual.
 d. Leak, Burst, repairs and replacement of spares should be attended within the time frame indicated in the special condition of contract.
 e. Power factor should be maintained.
 f. Level of residual chlorine, Ph, Fluoride should be tested for safety of water should be reported daily. If any discrepancy are there that should be rectified completely.

40. Penalty for Defective Operation and Maintenance works.

- 40.1 Penalty will be levied for defective Operation and Maintenance of works as specified in the "special conditions of contract".

41. Liquidated Damages.

- 41.1 Liquidated Damages will be levied for the cause specified in the "Special conditions of contract".

42. Foreclosure of Works

- 42.1 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.

V. PAYMENTS AND RECOVERIES

43. Payment Schedule

Payment shall be made in stages for each month as envisaged under:

Payment for milestones for Schedule of prices

Milestone	Payment in % of each item	
	Stage	Total
<ul style="list-style-type: none"> • Upon completion of the work / activity on monthly basis 	90%	90%
<ul style="list-style-type: none"> • Upon issue of Taking Over certificate of Operation and Maintenance of the works 	10%	100%

Payment for the value of work completed in a satisfactory manner as per agreement will be paid. However, 5% (Five percent) of the value of work completed as per agreement will be withheld (as retention amount) in every part payment. Out of 5% (five percent) of bill amount already withheld in the part bills, 2½ % will be released in the final bill and the remaining 2½ % (two and half percent) along with the Performance Security deposit will be released after satisfactory completion of defect liability period of 3 months. Every payment will be made after production of proof of evidence of making payment towards ESI and EPF.

However the percentage of payment to be withheld for effective performance of contract shall not exceed 10% of the total value of the contract.

43.1. Preparation of bills:

The Contractor shall submit their bills every month in the M.Book format, for the quantity only of the relevant running bills, duly signed to the Executive Engineer or any of his subordinate officer under his control as directed by the Executive Engineer. The Executive Engineer shall be responsible to scrutinize and make payment to the Contractor.

44. Release of Performance Security & Retention Amount

- 44.1 Out of the total 5% of the retention amount made in every running bill, 2½ % less any amount due to the Board shall be released in final bill and the balance 2½ % retained along with the Performance Security deposit will be released after satisfactory completion of defect liability period of 3 months.

45. Recovery of money payable to the TWAD Board

- 45.1. 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 notes for the 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 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.

46. Income Tax

- 46.1 During the course of the contract period, deduction of income tax shall be made at the prevailing rates from every payment as may be specified by the Income Tax Department and as amended from time to time.

47. Excise Duty - Deleted**48. GST**

GST is applicable as per G.O. 296, Finance (Salaries) Dept. Dt. 09.10.2017, GOI, Ministry of Finance - Central Tax (Rate), New Delhi Notification No. 12/2017 / Dt: 28.06.2017 and 20/2017/ Dt. 22.08.2017 and as amended from time to time.

From every payment made to the firm/ contractor, deduction at source towards GST shall be made for civil works contract as per Government of India, Ministry of Finance/ Department of Revenue, New Delhi Notification No. 20 / 2017 – Central Tax (Rate) / Dt.22.08.2017 subject to issue of amendments from time to time.

49. FUND CONTRIBUTION FOR MANUAL WORKERS

- 49.1 Towards contribution of fund for the benefit of manual workers employed in the construction works an amount equivalent to one percent of total estimated cost of the construction work proposed will be paid by the Employer (not to be recovered from the contractor) direct to the respective welfare Board, as per G.O. Ms. No. 295/ Labour and Employment (I 2) Department/ Dated: 17.12.2013, subject to issue of amendments from time to time by the respective department of Government of Tamil Nadu.

(Lumpsum provision for this contribution may be appropriately made in the Estimate sanctioned for the schemes and the amount would be remitted at the end of the financial year to the labour welfare Board, as per G.O Ms. No.283, MAWS Dept, Dated:2010)

50 Price Adjustment.

- 50.1 Price adjustment is not applicable under this maintenance contract.

VI.(A). LIST OF ANNEXURES

Sl. No.	Description	Clause No.
I.	Performance of the bidder showing total monetary value of Civil Engineering works (completed or maintained water supply schemes) for the last three years (2016-17, 2017-18 & 2018-19)	7.1.4
II.	Average Annual Construction Turn over Civil Engineering works (completed or maintained water supply schemes) for the last three financial years	7.1.5
III.	Experience in works of similar nature of Magnitude within a period of last 5 financial years (2014-15, 2015-16, 2016-17, 2017-18 & 2018-19)	7.1.6
IV.	Commitment of works on hand	7.1.6
V.	Works for which Bids are already submitted	7.1.6
VI.	List of Equipments available with Bidder	7.1.7
VII.	Qualification/Experience of key personnel proposed for technical and administrative functions under this contract	7.1.8
VIII.	Sample Format for evidence of access to or availability of credit facilities	7.1.9
IX.	Details of Litigation if any	7.1.10
X.	Declaration by the bidder pertaining to blacklisting/banned/debarment etc.	7.1.11
XI.	Format for O&M staff required for Operating Methodology	List to be enclosed
XII.	Affidavit as an undertaking given by the Contractor should be certified by the Notary duly stamped on a Notaries Stamp (Annexure-XII)	

VI.(B). LIST OF CERTIFICATES

Sl. No.	Description of Certificate	Clause No.
1	Signature of the proprietor or proprietors attested by the Notary Public	2.2
2	Signature of all the partners/power of attorney attested by the Notary Public	2.3
3	Registration of the firm, signature of the authorised person attested by the Notary Public	2.4
4	A copy of the listed power of attorney authorising the signatory of the bidder	7.1.2
5	Proof of registration of firm/Company	7.1.3
6	Audited Balance Sheets for the last 3 financial years	7.1.5
7	Credit line Certificate from Financial institutions	7.1.9
8	Income Tax Clearance Certificate	7.1.13
9	GST Registration Certificate	7.1.14
10	Certificate of performance issued by not less than the rank of Executive Engineer/Responsible person of the private organisation.	7.3

ANNEXURE I (for clause 7.1.4)
(To be notarised)

**Performance of the Bidder showing Total Monetary Value of Civil Engineering works
(executed or maintained water supply scheme) in the last Three Financial Years**

Year	Monetary Value of Civil Engineering works executed or maintained water supply scheme (Rs. in crore)
2016-2017	
2017-2018	
2018-2019	

Seal of the Firm

Signature of the bidder with date

**ANNEXURE II (for clause 7.1.5)
(To be notarised)**

Average Annual Construction Turnover

Each Bidder must fill in this form

Average Annual Turnover Data (Civil Engineering Work - executed or maintained water supply scheme) in the Last Three Financial years.		
Sl. No.	Year	Amount (Rs. in crore)
1	2016-2017	
2	2017-2018	
3	2018-2019	
	Average Annual Construction Turnover	

The information supplied should be the Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for work in progress or completed.

Seal

.....
.....

(Signature of the Bidder)

ANNEXURE V (for clause 7.1.6)**Works for which Bids are Already Submitted**

Sl. No	Contract No and Name of the Project	Description of the work	Name of the employer with full address	Value of the contract (Rs. In crore)	Stipulated period of completion	Date when decision is expected	Remarks if any

Seal of the firm**Signature of the bidder with date**

Annexure VI (for clause 7.1.7)**List of Equipment Available with Bidder**

Sl. No.	Equipment Name	Requirement for the project		Availability Status			Remarks
		Nos.	Capacity	Owned/ leased/To be procured	Nos and capacity	Age/condition	

Seal of the firm**Signature of the bidder with date**

**ANNEXURE VIII (for clause 7.1.9)
(To be notarised)**

SAMPLE FORMAT FOR EVIDENCE OF ACCESS TO OR AVAILABILITY OF CREDIT FACILITIES

BANK CERTIFICATE

This is to certify that M/s..... is a
reputed company with a good financial standing.

If the contract for the work, namely..... is awarded
to the above firm, we shall be able to provide overdraft/ credit facilities to the extent of Rs..... to
meet their working capital requirements for executing the above contract.

Seal of the Bank

Name of Bank :
Senior Bank Manager :
Address of the Bank. :

ANNEXURE X (for clause 7.1.11)

Declaration by the Bidder:

It is to certify that our firm
.....has **not** been black listed / banned / debarred by any Central/
State / UT Government Department or Undertaking / Organization.

Seal

.....
.....

(Signature of the Bidder)

ANNEXURE-XII

(Affidavit as an undertaking given by the Contractor should be certified by the
Notary duly stamped on a Notaries Stamp)

Model

(to be typed in Rs 100 Non-Judicial Stamp Paper)

AFFIDAVIT OF _____(Name of Contractor).

I/We _____(Name of Contractor) Son of..... (Hindu)

aged about years, Partner/Proprietor/Authorized signatory of -----

having our office at no..... do hereby solemnly affirm and sincerely states as follows:-

I /We state that We have entered in to Operation and Maintenance of CWSS contract with TWAD Board on date.

I/We state that I/We will be the Principal Employer as referred in the labour laws in respect of any operating staff / work person engaged for the purpose of delivery of services under this contract.

I/We state that there will not be any employer and employee relationship between TWAD Board and the workmen employed by us. We will take all responsibilities relating to present Labour Laws with regard to our employees.

I/We state that the workers employed by us in connection with performance of this contract will not claim any right of employment with TWAD Board.

I/We state that this Affidavit can be used as a Document before any Court of Law or Tribunal to defend the TWAD Board.

Solemnly affirm and signed by me on this day of 2020.

DEPONENT

BEFORE ME

NOTARY PUBLIC

VII 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 authorised to act on its behalf

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

“Subcontractor” means any person or persons, firm or company named in the Contract as a Subcontractor for a part of the Works or any person or persons, firm or company to whom a part of the Works has been subcontracted with the consent of the Engineer and includes the authorised representatives, successors, heirs, executors, administrators of such Subcontractors

“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 charges” means the Executive Engineer or any other Engineer authorised 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.

The quality parameters laid down in relevant BIS, TNBP, Bid Documents etc., are to be followed and it is stipulated to complete the entire works in all respects satisfactorily for the specified period.

“Constructional Plant” means all appliances or things of whatsoever nature required in or about the execution, completion or maintenance of the works but does not include materials or other things included to form or forming part of the permanent works.

“Specification” means the schedules, detailed designs, technical data, performance Characteristics and all such particulars referred to in the bid/contract and any modification thereof or addition thereto as may from time to time be furnished or approved by the Employer.

“Drawings” means the drawings, calculations and technical information referred to in specification and any modification of such drawings approved in writing by the Engineer and such other drawings, calculations and technical information as may to time be furnished or approved in writing by the Engineer.

“Site” means the land and other places on, under, in or through which the Permanent works and/or Temporary Works are to be executed and any other lands and places provided by the Employer for working space or any other purpose as may be specifically designated in the Contract as forming part of the site.

“Approved” means approval in writing including subsequent written confirmation of previous verbal approval

“Test” means such test or tests as are prescribed in the specifications or considered necessary by the Engineer

“ISS” means Indian Standard Specifications

“BIS” 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 the preceding date of the next calendar month

"Quarter" means a period of three months reckoning from the 1st date of January April, July and October and counted to the last date of March, June, September and December respectively.

"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 the 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

"Contractor Agreement" means the contract agreement referred to in clause (.....)

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

"Commencement date" means the start date of the contract period which shall be reckoned as the twenty eighth day from the date of issue of work order. If any dispute arises the decision of Engineer is final.

"Period of Maintenance" means the time for completing the works as stated in the contract (or as extended under clause....) calculated from the Commencement Date

"Maintenance means" the successful maintenance of the completed and commissioned project as a whole or in parts as the case may be for the stipulated period

"Joint Venture" means two or more firms/contractors aspiring to take up the contract jointly with the lead partner and other partner/partners possessing the required qualification.

"The Defects Liability Period" is the period of three months calculated from the completion date of the contract which will be certified by the Engineer.

"Materials" are all supplies including consumables used by the contractor for incorporation in the works.

CPHEEO (Central Public Health & Environmental Engineering Organisation)

2. INTERPRETATION

In interpretation of these Conditions of Contract, headings shall not be deemed part thereof or be taken into consideration. Words importing persons or parties shall include firms and corporations and any organization having legal capacity. Words importing the singular only also include plural and vice versa where the context requires.

The Employer will provide instructions clarifying the queries about the contract

3. 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.

4. Sufficiency of Bid

The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the bid and of the rates and prices stated in the Bill of Quantities, all of which shall, except insofar as it is otherwise provided in the contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, Plant or services or of contingencies for which there is a Provisional Sum) and all matters and things necessary for the proper execution and completion of the Works and the remedying of any defects therein.

5. Priority of Contract Documents

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. The priority of the documents forming the Contract shall be as follows:

- The Contract Agreement
- The Letter of Acceptance
- The Tender
- Conditions of the Contract
- Technical specifications
- Any other document such as correspondences between the Employer and the Contractor from the date of invitation of tender which is forming part of the Contract

6. Secrecy of the contract document

The Contractor shall treat all documents, correspondence, direction and orders concerning the contract as confidential and restricted in nature by the contractor and shall not divulge or allow access to these matters to any unauthorized person.

7. Instruction in Writing

Instructions given by the Engineer or Engineer's Representative shall be in writing, provided that if for any reason, the Engineer or the Engineer's Representative considers it necessary to give any such instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Engineer or Engineer's Representative, whether before or after the carrying out of the instructions given by the Engineer or Engineer's Representative, shall be deemed to be an instruction.

8. Commencement of Works

The Contractor shall commence preliminary works after the receipt by him of the LOA to this effect from the Employer. Thereafter, the contractor shall proceed with the Works with due expedition and without delay and in accordance with the programme schedule set out in the Contract.

9. Reference Marks

The basic centre lines, reference points and bench marks shall be fixed by the Engineer in charge of the works.

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. Supervision

The Contractor shall provide all necessary superintendence during the execution of the works and thereafter as may be necessary for the proper fulfilment 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 those

separately set out as the requirements of the contract, shall be skilled and experienced Technical Assistants, foremen and others competent enough to produce proper supervision.

The Contractor shall employ the technical staff as per the prescribed rules. The details of value, scale and minimum qualification prescribed for the employment of 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

Qualification and No.of Technical Supervisor/Assistant to be employed by the contractor.
One B.E (Civil/Mech/EEE/ECE/Instrumentation or equivalent) with 5 year experience. and One B.E (Civil/Mech/EEE/ECE/Instrumentation or equivalent) with 3 year experience. and Five Diploma holders/BE failed with 2 year experience and One Diploma holder in computer science/Computer science with two year experience
Penalty- The rate for failure on the part of the contractor to employ Technical Assistant. 1. For Diploma holder-Rs.2000/per month 2. For Degree holder-Rs.5000/per month

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

In the event of any staff of the contractor being non co-operative, negligent, incompetent or misconduct, 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.

11. Subletting of Contract.

Subletting of works is not allowed.

12. Specifications and Checks

The contractor is responsible for the Operation and Maintenance of the water supply works to supply the water including maintenance of all Electrical, Mechanical and ICA installations such as all components of Raw water pumping station, Water Treatment Plant, Booster pumping station and Master Balancing Reservoir, Raw Water & Treated Water Pumping main, Surge Protection arrangements, all valves and valve chambers, Cathodic Protection arrangements, SCADA arrangements for Packages I to V, level transmitters, level switch pressure transmitters, V'SAT & GSM communication arrangements at 74 locations , PLC Panels with UPS & Electro Magnetic Flow Meter at 74 locations in Packages II, III, IV & V, CCTV arrangements, OFC cables, Office building, staff quarters, Gardens, Pathways and open space etc., are to be carried out in compliance to the specifications detailed under volume-2, volume-3, volume- 4, volume- 5, volume- 6, volume-7a & 7 b, volume-8 and special conditions.

All the volumes from Volume-2 to volume-7a & 7b of bid document shall be applicable and used in conjunction to derive the works specifications and checks to be made accordingly.

1. General specifications and Particular specifications in volume 2 of Tender documents regarding execution of works, standards to be followed, interface with other Packages under HWS&FM Project, Contract Administration, Health, Safety & Welfare measures to be followed at site, drawings and documentation of plant and activities, Plant testing, training for updation to operating staff, Contractors and Employers obligations during the O&M period, testing on completion of works during taking over and handing over of the works, the standards and methods of execution and maintenance of the civil works for various installations, including Booster pumping stations, Re-chlorination stations, Electrical & ICA works, Building services, etc.
2. Mechanical, Electrical and Instrumentation specifications in volume 3 of Tender documents regarding Mechanical, Electrical and Instrumentation works.

3. Civil specifications in volume 4 of Tender documents regarding civil works.
4. List of equipments in volume 5 of Tender documents.
5. Drawings of structures and installations in volume 6 of Tender documents.
6. Operation & Maintenance Manual in volume 7a & 7b of Tender documents regarding procedures for operation and maintenance of every component, preventive and periodical maintenance along with spares and other formats of reporting for monitoring the operation and maintenance.

The pipes and specials, Mechanical, Electrical, ICA and miscellaneous spares & tools, test equipment and consumables etc., are to be procured from the vendors on approval of quality assurance plan (QAP) by the Engineer.

Log books and history register and all other registers and records as per the operation and maintenance manual are to be maintained for all pumping machineries duly entering hours and quantity of pumping, nature of repairs attended, reason for short fall of pumping hours etc., and periodical reports to be submitted to the engineer.

Reading of flow meter and water meters has to be recorded daily and the quantity of water delivered and reason for short fall if any has to be submitted as and when required by the engineer apart from periodical reports.

Leak and burst registers with details of pipeline, size and type of pipe, location, nature of leak, date of occurrence and date of rectification has to be maintained and submitted periodically apart from daily reporting. Water losses in the pipeline net works and installations shall be assessed authentically with reference to flow meter/ water meter readings and if necessary using the pumping details and has to be recorded, maintained and submitted monthly for effecting payment of monthly bills.

13. Custody and Supply of Drawings and documents

The contractor shall make any number of copies of drawings required by him at his own cost unless it is strictly necessary for the purposes of the contract. The drawings specifications and other documents provided by the Employer or the Engineer in charge shall not, without the consent of the Engineer in charge, be used or communicated to a third party by the contractor.

One copy of the Drawings shall be kept by the Contractor at the site and the same shall be made available for inspection and use by the Engineer and by any other person authorized by the Engineer.

14. Bill of Quantities

The Bill of quantities shall contain items for the, Operation and Maintenance of the Works to be carried out by the Contractor. The Bill of Quantities will be used to calculate the Contract Price. The contractor shall be paid for the quantum of work done at the rate mentioned for each item in the Bill of quantities.

15. Change in the Quantities

If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item/items, the rates as in the agreement for the relevant items shall be paid as per the actual quantity.

16. Additional items

If additional items that are not contemplated in the contract are to be executed, the Engineer in charge will execute the works either through the main contractor/firm or through any other agency. Payment for such works shall be made based on the rates derived by the Engineer in charge as per rules in force.

17. Order Book

An order book will be kept by the Officer in charge of the site (Junior Engineer/Assistant Engineer) of the particular component of the works. Orders entered in this book by the Engineer in charge or any higher authority shall be held to have been formally communicated to the contractor/firm. The Officer in charge of the site will sign each order as it

is entered and will hand over the duplicate to the contractor/firm or his agent, who shall sign the original in acknowledgement of having received the order.

18. Independent Inspection

The Engineer shall delegate inspection and testing of materials or Plant to an independent inspector/Agency. Any such delegation shall be considered as prerogative of the Engineer. In addition to cost of third party inspection based on rate fixed by TWAD Board, wherever felt necessary, the engineer shall be empowered to test all the materials for its quality in the TWAD Board laboratory or as directed by the Engineer. The cost of the third party quality check of pipes, valves and pump sets shall be borne by the contractor and reimbursed by the employer based on the rates fixed by TWAD Board.

19. Covering and Opening of Works.

No work shall be covered or put out of view without the approval of the engineer in charge. The contractor shall give due notice to the Engineer in charge whenever such works are ready for examination and the Engineer in charge within a reasonable period, arrange for the inspection and measuring of the work as may be necessary. No portions of the work shall be covered up without the consent of the Engineer in charge. The cost of opening any portion of the works that was covered without the consent of the Engineer in charge and the cost of covering thereafter shall be borne by the contractor. The contractor shall open the covered portion of the works for inspection by the Engineer in charge on a request and the inspection or examination shall be carried out promptly by the Engineer in charge. In the case of defects notified by the Engineer in charge, the contractor shall rectify the same as may be instructed by the Engineer in charge. All costs of opening, covering and rectification shall be on to the account of the contractor. Should the contractor refuse to open such portions of works the Engineer in charge shall open such portions with other persons and inspect the part of the works as he may feel necessary. On inspection, the works being not in accordance with the requirements of the contract documents, the Engineer in charge shall carry out necessary rectification and the entire cost of opening, rectification and closing shall be on to the contractor's account.

20. Temporary Diversion of Roads and Commencement of Work.

During Operation and Maintenance of the works, the contractor/firm shall make at his cost all necessary provision for the temporary diversion of roads, car tracks, footpaths, drains, water courses, channels etc., Should the contractor/firm fail to do these arrangements, the same shall be done by the Engineer in charge and the cost thereof shall be recovered from the contractor/firm.

21. Notice to Telephone, Railway and Electric Supply Undertaking.

The Contractor / firm shall give all notices required by any law or custom or as directed by the Engineer in charge and irrespective of whether notice be so required so directed or not, shall in all cases give due and sufficient notices to all persons and authorities having charge of the telegraph, water and other pipes, sewers, culverts drains, water courses, railway, telephone, highways, roads, streets, foot and carriage highways, pavement and other works, prior to commencements and at the completion of any work under this contract in order to enable the proper bodies or persons in respect of the matters aforesaid to attend and see the works within their jurisdiction and all matters and things incidental and pertaining thereto are secured, re-laid or reinstated in a proper and satisfactory manner. The notices by the contractor/firm shall also serve the purpose of enabling such bodies and persons to attend and secure, shore up, alter the position or remove, relay and reinstate the works and things belonging to them notwithstanding the notices given as aforesaid the Contractor/firm shall be chargeable and responsible for the proper protection and restoration of all matters and things herein referred to.

22. Watching and Lighting

The Contractor/firm at his expense shall provide at the site of works sufficient fencing, barricading, watching and lighting during day and night. The contractor/firm shall in every respect conform to the police regulations in these matters and shall free and relieve the Board on all such matters. Should the contractor/firm fail/neglect to do these arrangements, the same shall be carried out by the Engineer in charge and the costs thereof shall be recovered from the contractor/firm and prevent entry of unauthorised persons.

23. Measurement of Work

The Contractor shall submit the measurement of every month in the M.Book format and the work will be certified by the site Engineer (Junior Engineer / Assistant Engineer). The measurements as accepted by the site engineer shall be taken as final and conclusive.

24. Tools and Plants

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.

25. 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.

26. Co-existence with other Contractors.

Where two or more contractors are engaged on work in the same vicinity, they shall work together harmoniously with the spirit of cooperation and accommodation. The contractor shall not disrupt or disturb the works or labour arrangements of the neighbouring contractors. In case of disputes and difficulties arising between the contractors in the execution of the respective works, the Engineer in charge shall interfere and give directions for the smooth functioning of the entire works and it shall be the bounden duty of the contractors to abide by these instructions.

27. General Responsibilities and Obligations of the Contractor

The contractor shall, subject to the provisions of the contract, shall operate and maintain the works with proper care and diligence and provide all labour including the supervision thereof, materials, and all other things, whether of a temporary or permanent nature required for such operation and maintenance.

The contractor shall take full responsibility for the adequacy, stability and safety of all site operation and methods of execution.

The contractor shall promptly inform the Employer and the Engineer in charge if any error, omission, fault and other defects in the specification are identified at the time of reviewing the contract documents.

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 actually to be executed and its environs and the prices offered by him 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 Operation and Maintenance 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.

The contractor shall maintain all works in accordance with the specification and to the satisfaction of the Employer. The contractor shall strictly adhere to the instructions and directions of the engineer in charge, whether included in the contract agreement or not but concerning the safe and proper Operation and Maintenance of the works.

27.1 Testing operation

At the end of contract period, the Contractor shall carry out certain tests to demonstrate compliance with specified performance of particular items of Plant or parts of the Works shall be carried out independently. These independent tests shall also be a condition precedent to the issue of the Taking-Over Certificate for O&M of the Works. Satisfactory completion of the Tests is a prerequisite for the issue of the Taking-Over Certificate for O&M of the Works at the end of contract period.

27.2 Operation and Maintenance Period of the Works

27.2.1 General

The Employer and the Engineer will arrange to the successful contractor to take over the whole works from the previous contractor through TWAD Board officers to commence the operation and maintenance within 28 days from the date of LOA (Letter of Acceptance) which shall be reckoned as the date of commencement of the contract. If any dispute arises on the date of commencement, the decision of the Engineer is final.

The duration of O&M of the works ends on 31.03.2024 including the taking over and handing over at the start and completion of the contract period. A test on completion for O&M has to be satisfactorily completed by the contractor to demonstrate to the Engineer that the whole works is in good operative condition. The Engineer/Employer will issue a "minor outstanding works and defect list" that the Contractor has to accept to complete in the Defects Liability Period of O&M. The Employer and the Engineer will arrange to hand over (from the contractor now maintaining) of the whole of the works before 28 days to the successful contractor for them to commence the O&M of the whole of the works and to relieve the contractor now maintaining. The contractor now maintaining will be issued a minor and defects liability statement by the Engineer which has to be completed within one year. Under such scenario, the successful bidder has to allow the previous maintenance Contractor to access all the Plants to rectify the defects identified and complete all the outstanding works in the Defects Liability Period.

27.2.2 Responsibilities of the successful bidder:

Operation and routine maintenance for the whole of the Works,

(a) the contractor has to provide all necessary skilled supervisory staff and unskilled workers necessary for full operation and maintenance of the works.

(i) The supply of all spare parts required for maintenance of plant as specified elsewhere in the Contract;

(ii) Provision of all materials including chemicals, consumables, fuel and lubricants excluding electricity power charges for the operation of the Works.

27.2.3 Responsibilities of the previous maintenance contractor:

Rectifying defects in accordance with the requirements entered in the "minor outstanding works and defect list" issued by the Engineer/Employer in this Defects Liability Period of first 12 months at his own cost and shall prove to the Engineer or Employer of that.

27.2.4 Handing over of scheme

After satisfactory operation and maintenance of the Works, the Contractor shall be responsible for the following.

(a) Handing over of all works to the next successful bidder at the end of 48 months. Before handing over, the contractor has to perform all the tests as prescribed in clause 27.3 of general conditions.

(b) The handing over period of 28 days by the present contractor to the next successful bidder through the engineer will overlap at the last month of the contract period.

27.2.5 Engineer's responsibilities in O & M of the Works

During the Operation and Maintenance Period, the Engineer will provide and be responsible for the following in respect of the operation and maintenance of the Works:-

(a) Electric power

27.3 TEST ON COMPLETION FOR O&M OF THE WORKS

27.3.1 General

Test on Completion at the end of O & M of the Works shall be carried out to show that the Works are in complete and satisfactory working order. The tests shall be agreed in detail with the Engineer and be carried out to an agreed programme which shall be submitted to the Engineer at least 28 days prior to the start of the tests.

The tests will include functionality, leakage and any structural tests necessary to prove that the Works are in full and compliant order, and are fit for purpose.

After all the critical defects and outstanding works be completed and the necessary repeated tests be satisfactorily completed, the Engineer will furnish to the Contractor a "defects and minor outstanding work list". The Contractor shall rectify all those defects and complete all the minor outstanding works in the list during the Defects Liability Period of 3 months from the completion date (after 48 months) of the O&M works.

28. Labour

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

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 Engineer in respect of all claims that may be made against the Engineer for non compliance thereof by the contractor.

Now withstanding anything contained herein, the Engineer 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.

The contractor shall engage a particular worker for carrying out the specified work for the period not exceeding 235 (Two hundred and thirty five) days in all in a period of 12 Calendar months. Accordingly such a break in line with the above provision shall be exercised instantaneously.

29. Restriction of Working Hours

Subject to any provisions contained in the Contract, none of the works shall, save as hereinafter provided, be carried on during the night or on locally recognized days of rest without the consent of the Engineer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer, Provided that the provisions of this clause shall not be applicable in the case of any work which is customary to carry out by multiple shifts.

30. Right of Way and Facilities

The Contractor shall bear all costs and charges for special or temporary rights of way required by him in connection with access to site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.

31. Removal of Improper Work, Material and Plant

The contractor shall make his own arrangements for the procurement, supply and use of the construction materials and shall ensure that the materials either procured within the country or abroad conform to the relevant specifications set out in the bid documents. In case of alternatives being used, they should be of equal or higher quality than those specified subject to the review and written approval of the Engineer in charge. Differences between the standards specified and the proposed alternatives must be described in writing to the Engineer in charge at least 30 days in advance from the date on which the approval of the Engineer in charge is needed. The disapproval of the proposal by the Engineer in charge shall result in the contractor confining to the standards set forth in the contract documents. The contractor shall arrange for the inspection of the material at the manufacturing place or other places by the department personnel.

All materials and workmanship shall be in accordance with the specifications set out in the contract document and as directed by the Engineer in charge and shall be subjected to tests by the Engineer in charge or his representative at the place of manufacture or at the site of work or places wherever felt necessary. The contractor shall provide all the assistance necessary including instruments, machines and materials that are normally required for carrying out the testing /measuring the quality/quantity of the materials and workmanship. Any material rejected after testing by the Engineer in charge or his representative will not be used on the works. The contractor shall without claiming any extra cost, shall arrange for the testing of materials and supervision of the works. The Engineer in charge or his authorized representative will have access at all times to the places of manufacture, storage to ascertain as to whether the manufacturing process wherever mentioned is in accordance with the drawings and specifications.

The Engineer in charge shall have the right to order the removal of such materials which in his opinion are substandard stipulating a time limit for the removal of the same and replacement with quality material.

Notwithstanding the previous tests of the materials by the Engineer in charge or his representative, if any portion of the work, in the opinion of the Engineer in charge is not in order, the contractor shall redo such work to the satisfaction of the Engineer at no extra cost. In case of default on the part of the contractor in carrying out such orders, then the Engineer shall have the right to carry out such works through some other persons and the expenses thereon or incidental thereto shall be recoverable from the contractor.

32. Default of Contractor in Compliance

In case of default on the part of the Contractor in carrying out such instruction within the time specified therein, if none, within a reasonable time, the Engineer shall be entitled to employ and pay other persons to carry out the same and all costs consequent thereon or incidental thereto shall after due consultation with the Engineer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Engineer, and shall be deducted by the Engineer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

33. 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 Engineer first obtained, or shall have an execution levied on his goods, or if the engineer in charge shall certify in writing to the Engineer that in his opinion, the contractor.

- a) Has abandoned the contract
- 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

- 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
- d) Despite previous warnings in writing by the Engineer in charge, not executing the works and flagrantly neglecting to carry out the obligations under this contract.
- e) Has, to the detriment of good workmanship, or in defiance of the instructions of the Engineer in charge or in contract sublet any part of the contract, then the Engineer, may at his option, after giving two weeks' notice in writing to the contractor, enter upon the site and the works and expel the contractor there from without thereby voiding.
- f) The contract, or releasing the contractor from any of his obligation or liabilities under this contract, and may himself complete the works or may employ any other contractor to complete the work. The Engineer or such other contractor may use the construction plant, temporary works and materials which have been deemed to be reserved exclusively for the execution of the works under the provisions of the contract as may be thought fit and proper for the completion of the work. The Engineer may, at anytime, sell any of the said constructional plant, temporary works and materials which have been deemed to be reserved exclusively for the execution of the works under the provisions of the contract as may be thought fit and proper for the completion of the work. The Engineer may, at any time, sell any of the said constructional plant, temporary works and unused materials and apply the proceeds of sale in or towards the satisfaction of any sums due or which may become due to him from the contractor under this contract.
- g) has carried out the work in a defective manner.
- h) has not made payment of labour dues.
- i) has become eligible for maximum compensation under the "Liquidated damages" clause leading to Termination of the contract.

The Employer shall as soon as may be practicable after any such entry or expulsion by the Employer, fix and determine expert or by after reference to the parties, or after such investigation or enquiries as maybe thought fit to make or institute, and shall clarify what amount, if any had at the time of such entry and expulsion been reasonably occurred to the contractor in respect of work then actually done by him under this contract and the value of any of the said unused or partially used materials, any constructional plant and any temporary woks.

If the Employer shall enter and expel the contractor under this clause, the Engineer shall not be liable to pay to the contractor any money on account of the contract until the expiration of the period of maintenance and thereafter until the costs of execution and maintenance, damages for delay in completion, if any and all other expenses incurred by the Engineer have been ascertained and the amount thereof certified by the engineer. The contractor shall then be entitled to receive only such sum or sums, if any as the engineer in charge may certify would have payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the contractor on due completion by him, then the contractor shall, upon demand, pay to the Engineer the amount of such excess and it shall be deemed a debt due by the contractor to the Engineer and shall be recoverable accordingly.

If, by reason of any accident, or failure, or other event occurring to or in connection with the work, or any part thereof, either during the execution of the works, or during the period of maintenance, any remedial or other work or repair shall in the opinion of the Engineer in charge or his authorized representative, be urgently necessary for the safety of the works and the contractor is unable or unwilling at once to do such work or repair as the Engineer in charge or his representative may consider necessary, such works shall be carried out by the Engineer in charge. If the work or repair so done, which in the opinion of the Engineer in charge, liable to have been done by the contractor at his expense under this contract, all expenses incurred by the Engineer in carrying out such works shall be recoverable from the contractor or shall be deducted by the Engineer from the money due to the contractor provided always that the Engineer in charge or his representative, as the case may be, shall as soon after the occurrence of any such emergency as may be reasonably practicable, notify the contractor thereof in writing.

34. Power to vary work

The description of the works required to be executed by the contractor/firm are set out in the specifications, schedules and drawings, but the Engineer in charge reserves the power to vary, extend or diminish the quantities of work, to alter the line, level or position of any work, to increase, change or decrease the size, quality, description, character or kind of any work, to order the contractor/firm to execute the works or any part thereof, by day or night work, or to add or take from the work included in the contract as he may deem fit and proper without violating the contract and the contractor/firm shall not have any claim upon the Engineer for any such variation, extension, diminution, alteration, increase, change or decrease other than for the work actually done, calculated according to the prices tendered and accepted in this contract.

35. Extra for Varied Works

Any unforeseen additional work that may become necessary and is accordingly carried out under this contract based on proper written orders shall be measured and valued by the Engineer in charge at the rates contained in the contractor's/firm's original bill of quantities. If these rates do not apply to the additional works ordered to be carried out, then prior to execution of the additional work, a rate for such work shall be based on the prevailing Schedule of rates or if both cases not relevant or applicable then rate for such work shall ordinarily be fixed based on the actual vouchers and entered in a supplemental schedule and signed by the employer and the contractor/firm.

36. Omissions

In the event of anything reasonably necessary or proper to the due and complete performance of the work (Engineer in charge will be the sole judge on these things) being omitted to be shown or described in the drawings, specifications and schedules, the contractor/firm shall notwithstanding execute and provide at the rates noted in the bill of quantities all such omitted works and things as if they have been severally shown and described and the execution should be according to the directions of the Engineer in charge and to his satisfaction.

37. Notices Regarding Shoring etc.,

Wherever shoring or other works for the protection or security of the buildings/structures are necessary, the contractor/firm shall within a reasonable period before the execution of such works, shall serve notices well in advance upon the occupiers of the buildings/structures to be shored up or otherwise secured and upon all other parties entitled to notice, apprising them respectively that such works are necessary, that the contractor/ firm about to execute the same and will, at a time to be specified in such notice, enter upon the premises for the purpose of executing such works.

38. Cost of Repairs

Loss or damage to the Works or materials to be incorporated in the works between the Start Date and the end of the Defects correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions. Contractor shall attend to the defect in the work noticed during defects correction period within 3 days from the date of issue of notice to attend to the defects, failing which the defect will be remedied by engaging other Contractors at any cost and that cost will be recovered from the Contractor's money available with the Engineer and balance alone will be paid when it is due.

39. Suspension of Work

The Contractor shall, on the instructions of the engineer, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works or such part thereof so far as is necessary in the opinion of the Engineer in charge.

40. Suspension of Progress

The contractor/firm shall, without recompense, claim or demand, delay or suspend the progress of works as a whole or any part thereof, if and when or so often as directed by the Engineer in charge and for such time or times, as may be in the judgment of the Engineer in charge be necessary for the purposes or advantages of the undertaking. Upon all such occasions, whether directed or not, the contractor/firm at his/their expense, properly cover down and secure so much of the work as may be liable to sustain damage from weather or any other cause and shall at all times and

forthwith when required properly make good all the damage or injury which such works or any part thereof may have sustained and these should be done to the entire satisfaction of the Engineer in charge.

41. Termination

The employer may terminate the contract, when it is opposed / contrary to the covenant of the terms of the contract.

The employer shall issue notice of 15 days time to rectify and in the event of failure to rectify / comply the terms of the contract, the contract stands terminated on the 16th day from the date of issue of notice.

On termination of the contract, the employer shall withhold the amount payable to the contractor and the security deposit by the contractor till the amounts due to the Board are recovered.

The Employer may terminate the Contract for any reason that is regarded as breach of the Contract.

If the contract is terminated, the contractor shall stop work immediately, make the site safe and secure, After properly closing all the pits or open bore wells which shall not be abandoned and which may cause endanger to the public who are having close proximity in the site abandoned and leave the site as soon as reasonably possible on termination of the contract, the Engineer shall issue a certificate for the value of work done less payments received upto the date of the issue of certificates, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed. If the total amount due to the Engineer exceeds any payment due to the Contractor the difference shall be treated as debt payable to the Engineer and can be recovered from any amount due or may become due to the contractor.

In the case of termination, works that are pending for the proper completion of the project, shall be carried out by the Employer either by themselves or through any other agency. Any additional expenditure over the value finalised in the contract for any component or for the whole project, incurred by the Employer due to such termination, shall become recoverable from the contractor/firm whose contract stands terminated, from the money due or may become due to him/them. All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Employer, if the Contract is terminated because of Contractor's default.

42. Plant etc., not to be removed

The plant, tools and materials provided by the contractor/firm shall, from the time they are brought to the site of the works, during the construction, operation and maintenance and until the satisfactory completion of the contract, shall become and continue to be the property intended for the proper fulfilment of the contract and the contractor/firm shall not remove the same or part thereof without the consent of the Engineer in charge in writing.

43. Contractor not to occupy Land etc

In no case shall the contractor/firm continue to use or occupy or allow to be used or occupied any land or property either for the deposit of materials or plant or for any purpose whatever, after written notice from the Engineer in charge served on the contractor/ firm to the effect requiring the contractor/firm to remove or cause to be removed all such materials from any such land or property as aforesaid and to give vacant possession of such land or property to the Engineer in charge. All such notices shall be served through post office or other modes of delivery

to the contractor/firm at his/their usual or last known place of business, It is enough for the Engineer in charge to send the notice through any mode of delivery as he may prefer and implement this clause irrespective of the receipt of the notice by the contractor/firm. Should any materials or plant remain upon any such property or land or should any such land or property continue to be occupied or be used after such notice for any purpose whatsoever as aforesaid, then and in every such case and as often as the same shall happen, the contractor/firm shall forfeit and on demand pay to the Employer the charges fixed by the Engineer in charge as and for liquidated and ascertained damages for each and every day during which the said lands or property are so used and occupied as aforesaid from the time of such notice shall have been served.

44. Power Supply

The power supply connection if any from the TNEB has to be obtained by the contractor himself and the charges thereon shall be borne by the contractor. However, necessary vouchers in original for the payment made to the TNEB shall be produced to the Engineer in charge by the contractor, which will be reimbursed by the Engineer.

45. Completion of Operation and Maintenance of work and Handing over

After completion of Operation and maintenance period the scheme shall be handed over to the Engineer in charge as specified in the General Conditions of Contract 27.

46. Final Certificate

When the works covered under this contract are completed in all respects, the contractor / firm shall submit a request to the Engineer in charge to make a final measurement of the works and take over the whole of the works on behalf of the Employer and issue a final certificate to enable him/them to submit a final bill for payment. The Engineer in charge shall thereupon, unless he records reasons in writing to the contrary, make a final measurement of the works and take them over on behalf of the Employer and sign a certificate purporting to be a last certificate. Nothing in this clause or in the agreement shall prohibit the Employer taking over and using any portion of the works, which may be completed prior to the completion of the whole works of this contract.

47. Completion Certificate

The Contractor shall request the Engineer to issue a certificate of Completion of the Works and the Engineer shall issue certificate of completion after satisfactory completion of the works in all respects.

48. Taking Over

The Engineer in charge shall take over the Site with the works within the last twenty eight days on satisfactory completion of the maintenance of the entire project for the stipulated period as contemplated in this contract.

49. Performance Guarantee

The period of guarantee for the entire works shall be 3 months from the date of taking over certificate of the project/entire O&M Period to the satisfaction of the Engineer in charge of the work. If defects are noticed during the guarantee period, the firm/contractor shall rectify/replace wherever necessary at its/his own cost within 30 days of such intimation. If the contractor/firm fails to carry out rectification within the stipulated time, the rectification works shall be carried out

by the Engineer at the risk and cost of the contractor/firm and contractor/firm will become ineligible for the payment of the retention amount for the said purpose.

50. Maintenance of the Project

During the period of maintenance, all costs towards Labours, spares, chemicals, repairs and renewals shall be paid as per BOQ. The electrical energy charges payable to the TNEB during the maintenance period shall be borne by the Engineer.

51. Operating and Maintenance Manual

The operation and maintenance manual shall be followed as per Volume 7 a & 7 b of the bid document. In respect of Operating and maintenance manuals shall be updated by the contractor/firm based on their experience, at the time of handing over on completion of work at his/their cost.

52. Work on Private Property

The contractor/firm shall not commence any work in or upon, under, across of through any land, house building, shed, yard, area, roadway, ground, garden or any other place being private property until authorised in writing by the Engineer in charge to do so.

53. Protection

It will be the responsibility of the contractor to take adequate precautions and protect the adjoining sites against structural, decorative and other damages. The contractor shall be responsible for the safety of the public properties wherever the works are executed. Whenever damages are caused to the adjoining structures, roads, bridges etc due to the execution of this contract, it will be the responsibility of the contractor to restore them to their original level at his cost.

54. Accident or Injury to Workmen

The Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor. The Contractor shall indemnify and keep indemnified the Engineer against all such damages and compensation and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

55. Insurance , ESI and EPF

Insurance for the assets of TWAD Board, handed over to the contractor for operation and maintenance to provide water supply to the beneficiaries contractor's operating and supervisory staff, third party, Employer's personnel and the Employer's risk should be taken from the start date of contract period and documents to be submitted within 15 days of issue of work order. This should be renewed every year without any lapse till the period of completion. Due to default of insurance, any loss to the property or life will have to be suitably compensated at contractors own cost and risk as per the rules in force or as ordered by the court of law and TWAD Board will not take any responsibility in such cases.

Payment towards employer's (Contractor) share of ESI and EPF will be reimbursed to the contractor on production of actual vouchers.

56. Care and Risk

From the date of commencement of maintenance to the date of completion of the work and during the period of maintenance, the contractor shall take full responsibility and care thereof for the safety of the installation connected with the works. Any damage or loss are to be made good at the risk and cost of the contractor and shall ensure conformity in every respect with the requirements of the contract. The contractor shall be liable for any damage to the works occasioned by him in the course of any operation carried out by him for the purpose of completing any outstanding work and the damage so occurred shall be rectified at the cost of the contractor.

57. Safety Provisions

The Contractor shall be responsible for the safety of all activities on the Site.

- 1) Suitable scaffolds shall be provided for workers for all that cannot safely be done from the ground or from solid construction, except such short period work, as can be done safely from ladders. When a ladder is used, an extra mazdoor shall be engaged for holding the ladder and if the ladder is used for carrying materials as well, suitable footholds and handholds shall be provided on the ladder and the ladder shall be given an inclination no steeper than 1\4 to 1 (1\4 horizontal to 1 vertical). IS code for scaffolding and ladders I.S 3696 Part -I and Part II and its latest revisions is to be followed.
- 2) Scaffolding or staging more than 3.25 meters above the ground or floor swung or suspended from an overhead support or erection with stationary support, shall have guard rail properly attached bolted, braced and otherwise secured at least 1 metre high above the floor or platform of such scaffolding of staging and extending along the entire length of the outside and ends thereof with only such openings 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 the structure.
- 3) Working platform, gangways and stairways shall be so constructed that they do not sag unduly or unequally, and if height of a platform or gangways or stairway is more than 3.25 metres above ground level, it shall be closely boarded, having adequate width and be suitably fenced, as described in 2 above. Every opening in floor of a building or in a working platform shall be provided with suitable means to prevent fall of persons or materials by providing suitable fencing or railing with a minimum height of 1 meter. 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 7 metres in length. Width between side rails in a rung ladder shall in no case be less than 30 cm, for ladders, this width shall be increased by at least 6mm for each additional 30cm length. Uniform steps spacing shall not exceed 30cm.

- 4) Adequate precautions shall be taken to prevent danger from electrical equipment. No material on any of the sites shall be so stocked or placed as to cause danger or inconvenience to any person or to the public. The Contractor shall provide all necessary fencing and lights to protect public from accidents and shall be bound to bear expenses of defence of every suit, action or proceedings at law that may be brought by any person for injury sustaining, owing to neglect of the above precautions and to any such suit, action or proceedings to any such person or which may with the consent of the Contractor be paid to compromise any claim by any such person.
- 5) All necessary personal safety equipment as considered adequate by the Engineer shall be available for use of persons employed on the site and maintained in a condition suitable for immediate use and the Contractor shall take adequate steps to ensure proper use of equipment by those concerned
- a) Workers employed on mixing asphalt materials, cement and lime mortars/ concrete shall be provided with protective footwear, hand gloves and goggles.
 - b) Those engaged in handling any materials, which is injurious to eyes, shall be provided with protective goggles.
 - c) Stonebreakers shall be provided with protective goggles and protective clothing.
 - d) When workers are employed in Manholes, which are in use, the Contractor shall ensure that manhole covers are opened and manholes are ventilated atleast for an hour before workers are allowed to get into them. Manholes so opened shall be cordoned-off with suitable railing and warning signals or boards provided to prevent accident to public.
 1. Should follow the orders given in the G.O.Ms. No. 293/ MA& WS (MW), Dept/ dated 26.11.2010
 2. Should follow the orders given in the
 - i) MD/TWAD/Chennai.Lr.No. F. Manual Scavenging/ PM/ UGSS/ AE1/ 2018/ Dt. 29.01.2018
 - ii) MD/TWAD/Chennai.Lr.No. F. Manual Scavenging/AE-1/ UGSS/ PM/ 2017/ Dated 21.05.2018 as follows.

“The contractor would be responsible to pay a compensation of Rs.10 lakhs in the event of death of Workmen in the manhole / sewer system while cleaning it without safety gear and devices”.
 - e) The Contractor shall not employ men below the age of 15 and women on the work of painting with products containing lead in any form. Whenever 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 or lead products shall be used except in the form of paste of ready-made paint.
 - ii. Suitable face masks shall be supplied for use by workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scraped.
 - iii. Overalls shall be supplied by the Contractor to workmen and adequate facilities shall be provided to enable working painters to wash during and on cessation of works.
- 6) When the work is done near any place where there is risk of drowning, all necessary equipment shall be provided and kept ready for use and all necessary steps shall be taken for prompt rescue of any person in danger and adequate provisions shall be made for prompt first aid treatment of all injuries likely to be sustained during the course of the work.
- 7) Use of hoisting machines and tacks including their attachments, anchorage and supports shall conform to the following:

- a) i) These shall be of good mechanical construction, sound material and adequate strength and free from patent defects and shall be kept in good working order.
- ii) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality and adequate strength, and free from patent defects
- b) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years shall be in-charge of a hoisting machine, including any scaffold winch or giving signals to operator.
- c) In case of every hoisting machine and of every chain ring hook, shackle, swivel and pulley block used in hoisting machine or lowering or as means of suspension, safe working load shall be ascertained by adequate means. Every hoisting machine and all gear referred to above shall be plainly marked with safe working load. In case of hoisting machine having a variable safe working load and the conditions under which it is applicable shall be clearly indicated. No part of any machine or of any gear referred to above in this paragraph shall be loaded beyond safe working load except for the purpose of testing.
- d) In case of departmental machine, safe working load shall be notified by the Engineer. As regards Contractor's machine, the Contractor shall notify safe working load of each machine to the Engineer whenever he brings to the site of work and he shall get it verified by the Engineer.
- 8) Motors, gearing, transmission, electrical wiring and other dangerous parts or hoisting appliance shall be provided with such means so as to reduce to minimum risk and accidental descending of load; adequate precautions shall be taken to reduce to the minimum risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel such as gloves, sleeves and boots, as may be necessary shall be provided. Workers shall not wear any rings, watches and carry keys or other materials, which are good conductors of electricity.
- 9) All scaffolds, ladders and other safety devices mentioned or described herein shall be maintained in a safe condition and no scaffold ladder or equipment shall be altered or removed, while it is in use. Adequate washing facilities shall be provided at or near place of work.
- 10) The safety provision shall be brought to the notice of all concerned by displaying on a notice board at a prominent place at the work spot, persons responsible for ensuring compliance with the safety provision shall be named therein by the Contractor.
- 11) To ensure effective enforcement of the rules and regulations relating to safety precautions, arrangements made by the Contractor shall be open to inspection by the Engineer or his representative and the inspecting Officer.
- 12) The Contractor shall obtain prior permission of the competent authority such as Chief of Fire services for the site, manner and method of storing explosives near the site of work. All handling of explosives including storage, transport shall be carried out under the rules approved by the — Explosive Department of the Government.
- 13) The Contractor shall at his own cost provide and maintain at the sites of works, standard first aid box as directed and approved by the Engineer, for the use of his own as well as the Employer's staff on site.
- 14) Notwithstanding the above provision 1 to 13 Contractor is not exempted from the operation of any other Act or rules in force relating to safety provisions.

58. Provision of Health and Sanitary Arrangements

The contractor/firm shall provide at his/their own expenses, first aid appliances and medicines including an adequate supply of sterilized dressing and sterilized cotton wool etc kept in good order under the charge of a responsible person who shall be readily available during working hours. 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. Each water supply storage shall be at a

distance of not less than 15 metres from any latrine, drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine, drain or other sources of pollution, the well shall be properly chlorinated before water is drawn from it for drinking.

Adequate washing and bathing places shall be provided separately for men and women and such places shall be kept in clean and drained condition. Latrines and urinals shall be provided within the precincts of work place and the accommodation separately for each of them shall be at the rate of 2 seats upto 50 persons, 3 seats above 50 persons but not exceeding 100 persons, and 3 seats for every additional 100 persons. The contractor/firm shall employ adequate number of scavengers and conservancy staff to maintain the latrines and urinals in a clean condition.

Two sheds one for meals and the other for rest shall be provided separately for the use of men and women workers and properly maintained.

All the above amenities shall be provided at the contractor's/firm's own expenses besides providing sheds for his/their workmen.

59. Patent Rights

The Contractor shall save harmless and indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Contractor's Equipment, material or Plant used for or in connection with or for incorporation in the Works and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto.

60. Royalties

Except where otherwise stated, the Contractor shall pay all seignorage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

61. Old Curiosities

All old curiosities, relics, coins, minerals and any other item of archaeological importance found at the site shall be the property of the Government and shall be handed over to the Engineer in charge for depositing to the Government exchequer. Should any structure be uncovered, the instruction of the Engineer in charge shall be provided before demolition or removal of the structure.

62. Contractor dying, becoming 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.

- 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.
- b) 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.

63. Force Majeure

The works taken by the contractors under the contract shall be at the contractor's risk until the work is taken over by the Executive Engineer. The contractor shall arrange his own insurance against fire, flood, volcanic eruption, earthquake and other convulsions of nature and all other natural calamities, risks arising out of acts of god, Acts of

Terrorism, Civil disturbances, Riots during such period and that the TWAD Board/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 or any loss or damages occasioned by or arising out of acts of foreign enemies, invasion, hostilities or war like operations (before or after declaration of war) rebellion military or usurped power.

64. Payment out of Public Funds

The payments to the contractor/firm shall be made out of the funds under the control of the Employer in their public capacity and no member or officer of the Employer shall be personally responsible to the contractor/firm.

65. Bribery and Collusion

In the event of the contractor offering or giving any official of the employer, any gift or consideration of any kind as an inducement or regard for doing, or for bearing to do, any action in relation to obtaining or in the execution of the contract or any other contract with the employer, or for showing favour to any person in relation to the contract or any other contract with the employer, or if any of the such acts shall have been done by any person employed by the contractor or acting on his behalf, either with the knowledge of the contractor or not which are all grounds for the employer to terminate the contract awarded to the contractor. Similarly if the contractor colludes with another contractor or number of contractors whereby an agreed quotation or estimate shall be offered as a bid that will also form the basis for the employer to terminate the contract.

66. Technical audit

It is a term of this contract that department shall have the right to carry out post payment audit and technical Audit by the Engineers of Technical audit cell (or by an approved consultant of repute). The Technical audit officer shall have the powers to inspect the work or supply running account bill, final bill and other vouchers, measurement books, test reports and other documents either during progress of work or after completion of the same and order recoveries from the contractor for recorded reasons even though the contractor might have been paid earlier. These recoveries are enforceable against the contractor from any amount due to him, from performance security or withheld amounts or any amounts due to the contractor or may become due to him from the department in any work or supply.

67. Settlement of dispute

a. Dispute Redressal Committee

In order to ensure a dispute Redressal mechanism, a Committee headed by the Managing Director / Joint Managing Director and consisting of Engineering Director, TWAD Board and Engineering Director, CMWSS Board as Member, will comprise the " Dispute Redressal Committee" for each package in order to resolve any disputes between the Employer / Engineer - incharge concerned and the contractor

b. Jurisdiction of Court

In the event of non settlement of any dispute by the Dispute Redressal Committee 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.

C. Arbitration: In view of the above Dispute Redressal Committee, arbitration is not part of this Contract

68. Reservation of Right

The Employer reserves the right to accept or reject any or all the bids and to annul the entire process of bidding at any time. Under such circumstances, the Employer will neither be under any obligation to inform the bidders of the grounds for the action of the Employer nor the Employer will be responsible for any liability incurred by the bidder on this account.

69. Engineer's Decisions

Except where otherwise specifically stated the Employer will decide contractual matters between the Engineer and the Contractor.

70. Instructions

The Contractor shall carry out all instructions of the Engineer, which comply with the applicable laws where the Site is located.

The Engineer may instruct the Contractor to delay the start or progress of any activity within the Works.

71. Schedule of Maintenance

The schedule of maintenance shall be carried out as prescribed/detailed in the Operation and Maintenance manual volume 7a & 7b and as directed by the Engineer without omission. Any omission will be construed as default in the works and penalty will be levied as per the "Special condition of contract".

72. Equipments and Tools to be made available.

At each pumping station required tools and equipment to carry out the day to day activities minor repairs etc., as required and in specific to that pumping station or any other equipment installed as well as to maintain the premises in good environmental condition.

73. Spares

The list of spares (Mechanical, Electrical, ICA, Pipeline and Miscellaneous) annexed in this document are only tentative and has been arrived from the repairs met out in the previous years of maintenance. This may vary. The bidder has to anticipate the nature of all repairs that has to be carried out according to the present life of the machineries and quote the rate accordingly. The required spares that are anticipated have to be listed by the bidder and the total cost to be quoted in the BOQ accordingly. Before procurement the list of spares has to be got approved by the Engineer.

The amount quoted for total spares should be utilized within that year itself. If any unutilized amount / spares purchased in the previous year will be carry forward to the next year. The payment will be made based on the original invoices by the Engineer. However the amount prescribed for each year should not exceed at any cost.

CONTRACT TABLE OF CONTENTS

S. No	Contents	Page no
1	PART – I- Role and Responsibilities of the Contractor	
2	PART – II- Payment mode for Contractor	
3	PART – III- Role of the TWAD board	
4	PART – IV- Labour laws and procedure adopted	
5	PART – V- Special conditions	

PART I**ROLES AND RESPONSIBILITIES OF THE CONTRACTOR**

S.No	Contents	Page no
1.1	Interpretation of terminologies	
1.2	Responsibilities of the Contractor regarding operation and maintenance of the scheme.	
1.3	List of equipments, installations, structures, pipelines, appurtenances etc., to be maintained	
1.4	Schedule of Maintenance	
1.5	Equipment and Tools to be made available at each Pumping Station	
1.6	Safety Measures to be adhered	
1.7	Specifications for repairs to Electro Mechanical equipments and for attending Leaks and burst in pipelines.	
1.8	Formats for Registers to be maintained by the contractor at Site	
1.9	Uploading of data in Online Entry Formats in http://192.9.145.230/maint-projects/frmLeakBurst.aspx ,	

1.1. INTERPRETATION OF TERMINOLOGIES

1.1.1. In these conditions of contract the following definitions shall apply:

1.1.2 The Tender inviting authority and Tender Accepting Authority means Tamil Nadu Water Supply and Drainage Board

1.1.3 The Implementing authority/Department means Tamil Nadu Water Supply and Drainage Board

1.1.4 The Principal Employer

(a) In relation to TWAD Board, Engineer is (Executive Engineer / Superintending Engineer/Chief Engineer) specified in this behalf by TWAD Board;

(b) in any other establishment the person who is responsible for supervision and control of the establishment;

(c) The contractor, in respect of any operating staff / work person engaged by the Contractor for carrying the service delivery of water under this contractor.

1.1.5 The contract means the agreement concluded between the authority and the contractor, including all specifications, patterns, contractor's samples, plans, drawings and other documents incorporated or referred to there in.

1.1.6 The contractor means the person/agency who has been awarded the work and undertakes the Operation and maintenance of the CWSS.

1.1.7 The contract price means the price mentioned in the price schedule of the agreement for the respective items of works carried out, that is payable to the contractor by the authority under the contract for the full and proper performance by the contractor or its part of the contract.

1.1.8 The work means the work of providing designed quantity of water to all the habitations covered under the scope of the project, attending leaks/ bursts occurred during the maintenance period, attending repair works on the goods and equipments that the contractor is required to provide under the contract to establish the above mentioned service.

1.1.9 MLD is Million litres per day which equals 10,00,000 litres in one day.

1.2. Responsibilities of the Contractor regarding O&M of this Scheme.

- 1.2.1 A joint inspection to be conducted by the Contractor with TWAD Board Officials before taking over of the CWSS for maintenance.
- 1.2.2 The Contractor should take over the scheme after award of work for maintenance and handover the scheme in good condition, on completion of agreement period.
- 1.2.3 Before taking over the CWSS/WSS, inspect the Alignment and to check presence of any illegal connections (any connections other than the scope of the project) in the alignment during takeover of the scheme for maintenance. **If any illegal connection found during the course of taking over, the same shall be removed at the cost of TWAD Board.**
- 1.2.4 After taking over of the CWSS for maintenance, the Contractor is the custodian of the CWSS.
- 1.2.5 After taking over the scheme by the contractor, for any damages to the components of the CWSS made by men, machinery, etc., the contractor is solely responsible for rectification at his own risk and cost, except for damages caused by other line departments under the Government of Tamil Nadu, National Highways and NHAI.
- 1.2.6 After taking over the scheme by the contractor if any illegal connection found, it should be reported immediately to the AE/AEE. However, the Contractor should take immediate action to remove such Illegal connections at his risk and cost only. Continual illegal Tapping/Connection will lead to cancellation of agreement, as the maintenance of Pipeline is the sole responsibility of the contractor.
- 1.2.7 Ensure that the water is supplied to all beneficiaries covered under the project as per the earmarked quantity on normal condition.
- 1.2.8 Under all the circumstances, the supply to all beneficiaries shall be ensured.
- 1.2.9 Should inform every day before 08.00 AM about the pumping status of the scheme from 06.00 AM of previous day to 06.00 AM of present day to the AE/AEE through Whats App and through online entry as per the prescribed format (beneficiary supply details).
- 1.2.10 If Gen-set is available in the scope of contract, Test run of Genset should be carried out for a minimum of 30 minutes per week while in idle condition or as recommended by the manufacturer / directed by TWAD Engineer. The contractor should make necessary arrangement for Diesel / Lube oil required for operating the generator and the related cost will be reimbursed as per actual on production of original bills.
- 1.2.11 In case of failure of electricity during emergency / calamity, the contractor shall take immediate action to restore the electricity by approaching the TANGEDCO authorities. In case of non availability of generators, the Contractor shall engage generators for pumping the Earmarked quantity (MLD) as and when required under approval of the Executive Engineer and the hire charges will be paid as per the rate approved for this case.

- 1.2.12 The contractor shall submit the operating methodology to carry out in full this contract as per the prevailing guidelines, CPHEEO (Central Public Health & Environmental Engineering Organisation) guidelines and got it approved by the Engineer in charge. The Operating Staff should have the required minimum qualification as the case may be as Electrician with-C- Certificate, Electrician-grade II with ITI, Fitter grade II, Maintenance Assistant as per the requirement of works to be performed. All shall read and write. If the above qualified persons not engaged by Contractor, penalty will be imposed as per Clause.9 of VIII. Special Conditions of Contract.
- 1.2.13 Must keep a copy of the relevant portions of the latest CPHEEO manual on Operation and Maintenance of Water Supply Systems at work site and carry out the O&M works in accordance to the guidelines prescribed in the Manual.
- 1.2.14 The Quantity of water supplied to the beneficiaries is the essence of contract, and the contractor is solely responsible for the supplied quantity. The contractor should ensure designed quantity (MLD) of supply to all the beneficiaries as per the scope. Contractor should maintain and furnish register showing the quantity of water delivered duly signed by an authorized person by 26th of every month (from 26th of the previous month to 25th of current month).
- 1.2.15 The Contractor should maintain Pumping quantity register, pump set operation register, Leak & burst register, Consumables register, Electro mechanical repair register, preventive maintenance register, water retaining structure cleaning register etc. in the name of the contractor and the same shall be maintained and signed by the contractor/authorized person and the same shall be furnished during the inspection of TWAD Board Officer. The format for maintaining the above registers shall be got approved from the Executive Engineer in charge.
- 1.2.16 The Contractor should obtain the invoice / bill for electricity consumed and handover to the Assistant Engineer / Assistant Executive Engineer for onward submission for making payment and the contractor should make arrangements to submission of Cheque / Demand Draft to Electricity Board office without delay.
- 1.2.17 If Diesel Generator (DG) set is available, it should be maintained in working condition.
- 1.2.18 To attend all the repair works whenever it occurs in the pumping machineries, Electro-mechanical items immediately under intimation to TWAD Board Engineers as all the works are included in the essence of contract.
- 1.2.19 The contractor should attend the Leaks and Bursts whenever it occurs, within the stipulated period, and necessary photos shall be taken before during and after attending the works with latitude / longitude and the same must be uploaded online in the link <http://192.9.145.230/maint-projects/frmlLeakBurst.aspx>, through the Assistant Engineer/Assistant Executive Engineer concerned.
- 1.2.20 For attending the leaks/ burst, the contractor shall procure the minimum quantity of materials and keep advance stock which may require to attend all types of maintenance works at the earliest.
- 1.2.21 All the tools and equipments required for this contract shall be arranged by the Contractor at his own expense.

- 1.2.22 Contractor shall maintain the water meters in good working condition. Working of all type of Flow Meter / Water meter should be ensured, and if any repairs noticed, it should be rectified immediately so as to furnish the exact quantity of water supplied without any dispute. During the rectification period of water meter / flow meter, the quantity of supply will be arrived based on actual pumping hours or by discharge in case of gravity flow. If the flow meter / water meter is not repaired within 2 days, a penalty of Rs. 500/- per day will be levied until rectification.
- 1.2.23 Operate and maintain capacitor and allied switch gear so as to maintain a power factor of not less than 0.90 prescribed by TANGEDCO.
- 1.2.24 The power factor will not decrease or increase suddenly and hence the contractor should monitor it daily. If any decrease in the power factor is noticed, it should be informed to the Departmental Engineers (concerned Assistant Engineer/Assistant Executive Engineer) and rectification to be carried out by the contractor which will be paid for as per the agreement. Any penalty levied by TANGEDCO for non-maintenance of power factor, will be recovered from the Contractor.
- 1.2.25 Mandatory Regulations prescribed by CEIG and Inspector of Factories shall be followed without any lapse.
- 1.2.26 To maintain periodically plant and machineries, pump room and it's premises, Pumping main and valves and Treatment Units etc. as per the list detailed in clause 1.3 and as per the Schedule of Maintenance detailed in clause 1.4 of Part 1.
- 1.2.27 Each station should be provided with complete set of tools and equipments required for maintenance as listed in Part 1.
- 1.2.28 To adhere to safety measures as stipulated in Part 1.
- 1.2.29 Recording Register including starting/stopping time of the pump sets etc as per standard format.
- 1.2.30 Check the temperature/Noise of Running units and control panel
- 1.2.31 Provide gland packing for the pumps, sluice valve etc. whenever required to avoid leakage of water.
- 1.2.32 The Contractor shall report any problem in the motor and pumps, electrical main boards and fixtures etc, leaks and burst if any occurred in the pipe line, leaks and repairs in valves and any other damages caused to the water supply system, shall be brought to the notice of the Assistant Engineer/ Assistant Executive Engineer, immediately and take immediate action for the rectification and restoration of water supply within the prescribed time limit. Necessary entries shall be made in the corresponding register.
- 1.2.33 Any alternation/additions if needed to the existing arrangements, both in electrical and mechanical installations shall be attended only after proper approval from the Executive Engineer.
- 1.2.34 The contractor shall obtain the license from the competent authority of Labour Department in the respective District.
- 1.2.35 The contractor shall provide Technical Supervisor with minimum technical qualification of Diploma/Degree in Civil/Electrical/Mechanical Engineering as per the value of work mentioned under Annexure – VII.

- 1.2.36 The Contractor should also provide photo identity card to his own labour at his own cost mentioning the name and category along with the name of the Contractor without mentioning the TWAD Board name and Logo, etc..
- 1.2.37 If any labour is found to be unfit or disobedient to the instructions given by the TWAD Board officers, they shall be replaced by the contractor immediately.
- 1.2.38 The contractor shall provide required safety equipments to the labours engaged by him.
- 1.2.39 Operation on specified shifts / day as per labour law and ensuring that back up teams are available to take over during Sundays, Public Holidays and in the event of regular Operator's absence including watch and ward.
- 1.2.40 Operate and maintain pumping equipment with skilled staff with required qualifications and experience so as to safeguard the equipments against single phasing, earth fault, phase reverse etc., in power supply as well as their personal safety.
- 1.2.41 The contractors shall be fully responsible for operating and maintaining the scheme in a safe & secure manner.
- 1.2.42 The contractor shall obey all the provisions of various laws including Labour Laws as applicable to them. If the Board suffer any loss what so ever of nature, monetary or otherwise, as a result of direct or indirect action or inaction of the contractor in failing to comply with or not properly complying with any law, rules, regulations, notifications, instructions, circulars, G.Os, Board Proceedings, etc. issued by the Government or Board or any other authority as applicable to them as mandated by the law or otherwise, the said laws shall be computed in terms of money and recovered from the contractor.
- 1.2.43 The contractor shall necessarily obtain the due license from the Labour Department under the provisions of "Abolition of Contract Labour Act".

If the workers sustain any injury/death while on engagement, the compensation if any claimed by such workers will have to be paid only by the contractor himself and for which the contractor shall take appropriate insurance policies for the labourers who are engaged by him. The contractor shall be sole and full responsible for operating and maintaining the scheme in a safe & secure manner.

The contractor shall give an affidavit of undertaking of his own that any of the workers engaged by him will not claim any demand for regularization of work from the TWAD Board under any circumstances. The affidavit should be typed in Rs.100/- non judicial stamp paper and executed before the Notary Public.

The contractor shall give an undertaking that they will get implead in any of the litigation proceeding in the Jurisdictional Courts, initiated by his labourers against the TWAD Board and indemnify the claim made by the workers.

The contractors shall abide all the Rules and Regulations as stipulated in the Labour Laws in India with regard to payments to be made to the workers.

1.3 List of equipments, installations, structures, pipelines, appurtenances etc., to be operated and maintained under this contract.

Sl. No.	Name of the equipments, installations, structures, pipelines, appurtenances etc., to be operated and maintained along with the details of specifications such as type, make, HP, Head, discharge, capacity length, size and other relevant details such as hours of pumping, pressure, quantity & quality of water, etc.	Quantity	Location
<p>As enclosed in Volume-5 " List of Equipments"</p>			

1.4 Schedule of Maintenance

Item No.	Description of work	Daily	Weekly	Fort-nightly	Monthly
1	Pump House:				
1.1	Cleaning of site	<input type="checkbox"/>			
1.2	Cleaning of Pump House including Doors and Windows	<input type="checkbox"/>			
1.3	Cleaning of Panel Room, D.G. room etc.	<input type="checkbox"/>			
1.4	Check pump is operational	<input type="checkbox"/>			
1.5	Change over to standby pumps	<input type="checkbox"/>			
1.6	Record hours run	<input type="checkbox"/>			
1.7	Check operation of air release pipe	<input type="checkbox"/>			
1.8	Lubricating of Rolling Shutters			<input type="checkbox"/>	
1.9	De-weeding of Pump Room premises and removal of cob webs etc in the Pump Room.				<input type="checkbox"/>
2	H.T.Structure, Transformer yard and Transformers:				
2.1	Cleaning of transformer yard, removal of grass and plants	<input type="checkbox"/>			
2.2	Check up and water the earth pits		<input type="checkbox"/>		
2.3	Megger – earth resistance check in the earth pits				<input type="checkbox"/>
2.4	Check and operate the AB switch in the structure for its smooth operation and replace contacts if necessary		<input type="checkbox"/>		
2.5	Check up dropout fuses and H.G. fuses and replace if necessary	<input type="checkbox"/>			
2.6	Check up insulators and lightning arrestor in the structure and replace if necessary			<input type="checkbox"/>	
2.7	Check the transformer for any leakage of oil and top up if necessary		<input type="checkbox"/>		
2.8	Check the temperature of transformer oil from dial thermometer and record		<input type="checkbox"/>		
3	H.T. Panel:				
3.1	Clean the panel externally and internally using blower	<input type="checkbox"/>			

3.2	Carryout visual check of observe over all condition of the breakers and clean the breakers thoroughly	<input type="checkbox"/>			
3.3	Grease/Oil joints and sliding surfaces			<input type="checkbox"/>	
3.4	Check the internal connections			<input type="checkbox"/>	
3.5	Check the operations of doors and conditions of door gasket			<input type="checkbox"/>	
3.6	Check Volt Meter, Ammeter etc. in the panel for its working and replace if necessary	<input type="checkbox"/>			
3.7	Check all the indicator lamp and control fuses and replace if necessary	<input type="checkbox"/>			
3.8	Check the operation of relays			<input type="checkbox"/>	
4	LT Panel :				
4.1	Clean the panel externally and internally using blower	<input type="checkbox"/>			
4.2	Check all the connections for tightness			<input type="checkbox"/>	
4.3	Check the contacts switches for tightness and apply petroleum jelly if necessary			<input type="checkbox"/>	
4.4	Check Volt Meter Ammeter and respective P.T. and CTS for its working and connection	<input type="checkbox"/>			
4.5	Check all the indicator lamp bulbs and fuses and replace if necessary		<input type="checkbox"/>		
4.6	Check operation of all switches and bush buttons		<input type="checkbox"/>		
5	CAPACITORS:				
5.1	Check all the capacitors for oil leakage if any	<input type="checkbox"/>			
5.2	Clean the insulator with dry cloth and check the connections for tightness			<input type="checkbox"/>	
5.3	Check the fuses and meggar the units?				<input type="checkbox"/>
6	MOTORS:				
6.1	Clean the motor terminal box, check the cable connection to tightness	<input type="checkbox"/>			
6.2	Check body of the motor for firm connection			<input type="checkbox"/>	

6.3	Check the foundation bolt and nut for tightness	<input type="checkbox"/>			
6.4	Check normal sound and vibration	<input type="checkbox"/>			
6.5	Check the bearing grease and replace if necessary				<input type="checkbox"/>
6.6	Check air cooling fan for vibration and noise				<input type="checkbox"/>
6.7	Check meggar test for windings and earth				<input type="checkbox"/>
6.8	Cleaning of motor slip ring, carbon brush, contacts and replace if necessary		<input type="checkbox"/>		
7.0	STARTERS AND OCB				
7.1	Clean the starter and check up the cable connection	<input type="checkbox"/>			
7.2	Check contacts and replace if necessary		<input type="checkbox"/>		
7.3	Check for cable connection		<input type="checkbox"/>		
7.4	Check for OLR and No volt coil		<input type="checkbox"/>		
7.5	Check the level of transformer oil in the OCB and top up if necessary			<input type="checkbox"/>	
8.0	MAIN PUMPS				
8.1	Outside Cleaning	<input type="checkbox"/>			
8.2	Check Bearing Temperature	<input type="checkbox"/>			
8.3	Check & Top up Bearing grease or replace grease			<input type="checkbox"/>	
8.4	Check gland for leak and add gland layer if required	<input type="checkbox"/>			
8.5	Replace gland packing completely				<input type="checkbox"/>
8.6	Check foundation nuts and bolts for tightness and rusting		<input type="checkbox"/>		
8.7	Check inspection covers and check condition of impeller				<input type="checkbox"/>
8.8	Check the pressure and pressure gauges on suction and delivery side	<input type="checkbox"/>			
8.9	Clean the pump pit and pump floor	<input type="checkbox"/>			

8.10	Check for coupling Bolts and nuts, coupling tyre and replace the tyre if required		<input type="checkbox"/>		
8.11	Check for vibration and noise of the pump	<input type="checkbox"/>			
8.12	Pump out leaked water from the pump pit	<input type="checkbox"/>			
8.13	Check the condition of bearing oil and replace if required			<input type="checkbox"/>	
9	SUMP PUMP				
9.1	Check the pump for operation	<input type="checkbox"/>			
9.2	Check the coupling and replace if necessary			<input type="checkbox"/>	
9.3	Clean the starter panel externally and internally	<input type="checkbox"/>			
9.4	Check the fuses and contacts, apply petroleum jelly if necessary		<input type="checkbox"/>		
9.5	Check the foot valve and replace if necessary	<input type="checkbox"/>			

Item No.	Description of work	Daily	Weekly	Fort-nightly	Monthly
10	Diesel Generator Set, Battery and Emergency light:				
10.1	Clean the Battery, top up, distilled water in the battery if necessary	<input type="checkbox"/>			
10.2	Remove the connection of battery terminals, clean thoroughly and reconnect after applying petroleum jelly		<input type="checkbox"/>		
10.3	Clean the emergency lights internally and externally	<input type="checkbox"/>			
10.4	Check the light, indicator lamp for its proper working and attend if necessary		<input type="checkbox"/>		
10.5	Check fuel level in the diesel tank of DG set and top up if necessary		<input type="checkbox"/>		
10.6	Check engine oil level in the D.G. set and add if necessary			<input type="checkbox"/>	<input type="checkbox"/>
11	OHT CRANES:				
11.1	Carry out thorough cleaning of crane including girders, trolley, platform other equipments and control panels			<input type="checkbox"/>	
11.2	Check all the cable connections for tightness		<input type="checkbox"/>		
11.3	Check contacts and fuses and replace if necessary		<input type="checkbox"/>		
11.4	Inspect gearbox for any leakage of oil				<input type="checkbox"/>
11.5	Check the connection of limit switch				<input type="checkbox"/>
11.6	Check panels internally and externally and apply petroleum jelly if required				<input type="checkbox"/>
11.7	Check the rope and apply grease if required				<input type="checkbox"/>
12	SUCTION & DELIVERY VALVES AND ACTUATOR:				
12.1	Check the condition of gland packing and tighten or replace if necessary	<input type="checkbox"/>			

Item No.	Description of work	Daily	Weekly	Fort-nightly	Monthly
12.2	Check actuator gear box for leakage		<input type="checkbox"/>		
12.3	Check the condition of limit switches			<input type="checkbox"/>	
12.4	Check the condition of oil and grease, replace if necessary			<input type="checkbox"/>	
12.5	Check the bolts and nuts for tightness			<input type="checkbox"/>	
12.6	Check cable terminals at motor terminal box of actuator			<input type="checkbox"/>	
12.7	Check clutch and gear arrangement for manual operation				<input type="checkbox"/>
12.8	Apply grease to the spindle if necessary			<input type="checkbox"/>	
12.9	Check for free movement			<input type="checkbox"/>	
13	PIPELINE:				
13.1	Check the pumping main, branch pumping main, feeder main for any leak /burst /damage	<input type="checkbox"/>			
14.0	VALVES:				
14.1	Check the operation of non-return valve	<input type="checkbox"/>			
14.2	Check the disc for its smooth opening and closing operation		<input type="checkbox"/>		
14.3	Check the sluice valves	<input type="checkbox"/>			
14.4	Check the air valves	<input type="checkbox"/>			
14.5	Check the scour valves				<input type="checkbox"/>
15	SUMP:				
15.1	Check the cleaning				<input type="checkbox"/>

1.5 Equipments and tools to be made available at each pumping station

Sl. No.	Description	Set/no.
1	Ultrasonic Flow detector	1 set
2	Double end spanner (6 mm to 32 mm)	1 set
3	Screw driver (6", 8", 12")	1 set
4	Pipe wrench (14", 18", 24")	1 set
5	Cutting pliers	1 set
6	Long nose pliers	1 no.
7	Hammer (2 Kgs)	1 no.
8	Test lamp with 15m wire	1 no.
9	Megger (1000 V)	1 no.
10	Multimeter	1 no.
11	Tong tester	1 no.
12	Hacksaw frame with 3 nos. blade	1 no.
13	Spade (Manwetty)	2 nos.
14	Crow bar	1 no.
15	Sickles	2 nos.
16	Ring spanner (6mm to 32mm)	1 set
17	Caution Board (Men at work)	1 no.
18	Grass cutter	1 no.
19	Country knife	2 nos.
20	Iron chutty	2 nos.
21	Grease gun	1 no.
22	Wheel barrow	1 nos.
23	Torch light with 3 cells	2 nos.
24	Hand blower	1nos.

1.6 SAFETY MEASURES TO BE ADHERED:

All electrical safety equipments like hand gloves, testers and other electrical needs are to be provided by the contractor in the Pumping Stations as stated below:

Sl. No	Name of Equipment	For	
		HT Supply	LT Supply
1	Safety belt with rope	2 nos	1 no.
2	Gas Mask	1 no.	1 no.
3	Shock proof hand gloves (11 KV grade gloves)	1 pair	1 pair
4	Disposable hand gloves	2 pairs	2 pairs
5	Gum boot	2 pairs	1pair
6	Electrical line tester	1 no.	1 no.
7	Earth discharge rod	1 no.	1 no-
8	First Aid Box	1 no.	1 no.
9	Emergency light	1 no.	1 no.
10	Fire Extinguisher	2no.	1no.
11.	Rubber Mat of suitable size	as per requirement	

Note: The above is only an illustrative minimum list. The contractor must note that it is their responsibility to ensure the lives and safety of the workers employed by them. The premises should be maintained as per CEIG norms and requirements. If any failure/ Penalty due to non adherence of CEIG norms will have to be borne by the contractor. Towards this end, all the equipments of appropriate specifications should be procured and made available to the workers in usable conditions throughout the period of contract. Responsibility for any health problem or death will solely rest with contractor.

1.6.2 Only experienced, skilled people have to be employed by the contractor.

1.6.3 Safety belts, ropes, Gas mask, Torch lights, are to be provided by the contractor for laborers who get into wells.

1.6.4 All personnel shall be covered by insurance under workmen compensation Act.

1.6.5 All labour act provisions has to be met with.

1.6.6 Exhibit labels of "SAFETY FIRST"

1.6.7 First Aid Box should made available within the reach of the staff in all Pump Rooms and Booster Stations.

1.6.8 No medicine beyond the expiry date should be kept in the first aid box

1.6.9 First Aid Chart should be displayed in the Pump Rooms.

**1.7 Specifications for repairs to Electro Mechanical equipments and for attending
Leaks and burst in pipelines.**

1.7.1 Detailed Specification for repair works

- a) **Rectification of Leaks in pipelines**
- b) **Rectification of Bursts in the pipelines**
- c) **Rewinding of Motors**
- d) **Repairs and reconditioning of Pump sets**
- e) **Repairs and reconditioning of Panel Boards**
- f) **Repairs and reconditioning of Sluice valves**
- g) **Repairs and reconditioning of Air Valves**
- h) **Other items of works.**

1.7.2 Payment for repair and rectification works:

The payment shall be made as per the rate quoted by the Contractor in the price schedule for each items of works as specified. As per the actual condition, during repairs and rectification works, if any material / work is omitted as not necessary, then the amount of such items shall be deducted based on the rate / cost in the price bid.

1.7.3 Payment for supply, delivery and utilization of consumables

The items mentioned in the price bid under the supply and delivery of consumables for various categories of works shall be paid as per the rate quoted in the bid. These consumables are to be utilized during regular O&M works, preventive maintenance and attending minor repairs and shall be carried out by the operating staff and no additional payment will be made.

1.8. Formats for Registers to be maintained by the contractor at site

1.8.1 Leak/bursts Register

Sl.No	LS/Location at which leak/burst occurred	Reasons	Whether repeated occurrence or not	Size of main	Date of occurrence of leak/burst	Date and Time Information to the Assistant Engineer Concerned	Date of Inspection Field Engineer	Instruction issued	Date of rectification		Materials used for rectification
									Start	Finish	
1	2	3	4	5	6	7	8	9	10	11	12

1.8.2 Pump set, Panel Board Repair Register

Sl.No	Location and Details of Pump set	Type of repair and reasons	Whether repeated occurrence or not	Date of Occurrence of Repair	Date and Time Information to the Assistant Engineer Concerned	Date of Inspection Field Engineer	Instruction issued	Date of rectification		Materials used for rectification
								Start	Finish	
1	2	3	4	5	6	7	8	9	10	11

1.8.3 Valves inspection and rectification Register

Sl.No	No. of Sluice Valves/ Scour Valves inspected	No. of minor leak in any Valves	No. of minor leaks attended Valves	No. of gland Packing/ applying grease in Valves	No. of defective Valves still to be attended

1.8.4 Log Book Formats for Pump set Operations, Genset Operation , etc., shall be included and specified by the Tender Calling Authority.

1.9 Uploading of data in Online Entry Formats in http://192.9.145.230/maint-project/frm_Leak_Burst.aspx,

1.9.1 Online Entry Formats For Leak and Burst Details

Sl.no	Leak ID	Project	Reach	Location	Date of Leak/Burst	Latitude	Longitude	Pipe Material	Diameter (mm)	Class of Pipe	Reason	Remarks

1.9.2 Online Entry Formats For Pump set repair

Sl.No	Component	Location of Pump set	Pump set type	Main/Stand by	Discharge in LPM	Head in M	HP of Pump set	Erection Year	Pump set Serial No. (As Mentioned in Name Plate)	Reason for Pump set Repair	Component of Pump set/ Panel Board/ Cable under Repair	Date of Repair Occurred	Date of repair rectified and erected	Remark

1.9.3. Other formats prescribed during contract period, the Contractor shall have to carry out the online entry for such formats also.

PART II**PAYMENT MODE FOR THE CONTRACTOR**

S.no	Contents	Page no
2.1.	Measurement and Bill	
2.2.	Quantification of value of work done and Penalty	
2.3.	Payment for the value of work	

2.1 Measurement and Bill:

The payment to the contractor will be made based on the following basis.

2.1.2 Bill Submission:

2.1.2.1 The contractor should submit the O & M bills once in a month in the M.Book format with proper records enclosed i.e., Pumping quantity register, ESI, EPF details, Leak & burst register, Consumables register, Electro mechanical repair register and sump cleaning etc .

2.1.2.2. Based on the bill submitted by the Contractor the Assistant Engineer shall prepare and submit the bills in relevant forms after deducting any penalty imposed towards the work as the case may be.

2.2 Quantification of value of work done:

2.1.2.1 The quantity of water supplied will be calculated monthly, based on the quantity of water supplied daily.

2.1.2.2 If the contractor fails to effect the supply of earmarked quantity of water to the Packages 2, 3, 4 & 5 under the scope of this contract, unless and otherwise due the reasons mentioned in clause 11. of VIII. Special Conditions of Contract, then 90% of the payments will be made proportionately.

"Bill Claim Amount for supply based portion of BOQ / Agreement =

$$90\% \times (\text{BOQ or Agreement value for the reaches concerned}) \times \left(\frac{\text{(served Quantity in KL)}}{\text{(Earmarked Quantity in KL)}} \right)$$

If the contractor fails to carry out the Preventive maintenance as per the Schedule of Maintenance listed in the Clause 1.4 of part - I then the payment will be made as below as the case may be:

(i) Daily scheduled activities not done fully	: (10 %)
(ii) Weekly scheduled activities not done fully	: (5 %)
(iii) Fortnightly scheduled activities not done fully	: (2.5 %)
(iv) Monthly scheduled activities not done fully	: (2.5 %)
Total	: (20 %)

The following formula will be adopted for making payment to each of the above four category in case of failure in schedule of Maintenance in that category:

"Bill Claim Amount for supply based portion of BOQ / Agreement =

$$90\% \times (\text{BOQ or Agreement value for the schedule of Maintenance as per clause 1.4 of part I}) \times \left(\frac{\text{(% of schedule of Maintenance done for four category in total)}}{20\%} \right)$$

For attending the repair works in Gate Valves, Sluice Valves, air valves, Non Return Valves, Scour Valves etc., it should be completed within **24** hours.

2.2.3 Penalty:

2.2.3.1 The transmission losses due to leaks or burst in pipeline, valves, and other installations, over flow of sumps during power failure should not exceed 7% of the quantity to be supplied calculated on monthly basis. If the transmission losses in the said situations exceed 7% as calculated above shall be Rs.150 per KL of such exceeded quantity.

2.2.3.2 In the case of wastage of water by over flow of sumps / OHTs due to failure on the part of contractor shall be Rs.150 per KL of such over flown/ wasted water.

2.2.3.3 If any damage caused to scheme components, damage shall be rectified immediately by the contractor at his own cost. Penalty shall also be imposed for the default caused as per relevant clauses of this contract. If defect is not duly rectified by the contractor, the cost will be recovered as determined by TWAD Board including all escalations and losses.

2.2.3.4 If the contractor fails to attend the rectification works of the Electro mechanical items, cleaning the sumps etc a fine will be imposed as decided by the Executive Engineer depending on the value of such repair works / cleaning of sump works.

2.2.3.5 If the contractor fails to ensure the required residual chlorine at all delivery points including the tail end, a penalty will be imposed as per clause 6. of VIII. Special Conditions of Contract under the scope of this contract.

2.3 Payment for the value of work:

Payment shall be made in stages for each month as envisaged under:

Payment for milestones for Schedule of prices

Milestone	Payment in % of each item	
	Stage	Total
<ul style="list-style-type: none"> Upon completion of the work / activity on monthly basis 	90%	90%
<ul style="list-style-type: none"> Upon issue of Taking Over certificate of Operation and Maintenance of the works 	10%	100%

Payment for the value of work completed in a satisfactory manner as per agreement will be paid. However, 5% (Five percent) of the value of work completed as per agreement will be withheld (as retention amount) in every part payment. Out of 5% (five percent) of bill amount already withheld in the part bills, 2½ % will be released in the final bill and the remaining 2½ % (two and half percent) along with the Performance Security deposit will be released after satisfactory completion of defect liability period of 3 months. Every payment will be made after production of proof of evidence of making payment towards ESI and EPF.

However the percentage of payment to be withheld for effective performance of contract shall not exceed 10% of the total value of the contract.

Part III**ROLE OF TWAD BOARD**

1. A joint inspection will be made by TWAD Board with the contractor or his representative before handing over of the CWSS / WSS for operation and maintenance.
2. The Executive Engineer or his Authorized representative shall furnish the salient details, components and flow diagram of the CWSS to the contractor along with the list of beneficiaries covered under the scope of this CWSS and the earmarked quantity required to be supplied to those beneficiaries. (PART –VI)
3. The field officers / Assistant Accounts Officers / Executive Engineers should ensure that all the statutory requirements as per the license issued by the competent authority and all the requirements of the Contract Labour (Regulation & Abolition) Act have been complied with by the contractor and a certificate to that effect may be directed to be incorporated by the concerned officer along with the running bills of the contractor, when the bill is sent for passing / sanctioning before the competent authority.
4. Power consumption charges will be paid by TWAD Board. However if penalty is imposed by the TANGEDCO due to reduction in maintaining the Power Factor, it will be recovered from the contractor.
5. TWAD Board will arrange to provide the Telephone connection in the premises wherever found necessary and the entire telephone charges including the rent shall be paid by TWAD Board.
6. The cost of Diesel consumption for operating Generators will be reimbursed by TWAD Board to the Contractor on submission of original voucher from the authorized seller.
7. To conduct regular inspection to ascertain the effective functioning of system through Engineers of TWAD Board.
8. Payment will be processed on monthly basis on receipt of bills from the contractor by following Board's procedures.

PART IV

LABOUR LAWS TO BE FOLLOWED

The rights and benefits conferred on the workmen employed by the contractor under the provisions of various Labour Laws are the responsibility of the contractor. The Contractor has to indemnify the TWAD Board in case of loss or any damages. It is the responsibility of the contractor to take insurance policy under Workmen's Compensation Act, 1923 for each labour engaged by the contractor. The Contractor will be responsible for any deficiency of safety measures to be adhered as stipulated in Annexure D. A Photocopy of the insurance under workmen's compensation Policy should be furnished to the Board. The policies should be kept alive till completion of the contract.

The Contractor shall adhere to following Laws wherever applicable

- 1) Workmen Compensation Act, 1923,
- 2) Payment of wages Act, 1936,
- 3) Industrial Disputes Act, 1947,
- 4) Minimum Wages Act, 1948,
- 5) Factories Act, 1948,
- 6) Employees PF and Miscellaneous Act, 1952,
- 7) Payment of Bonus Act, 1965,
- 8) Payment of Gratuity Act, 1972,
- 9) Equal Remuneration Act, 1979,
- 10) Maternity Benefit Act, 1951,
- 11) Contract Labour(Regulation & Abolition) Act, 1970,
- 12) Industrial Employment (Standing Orders) Act, 1946,
- 13) Trade Unions Act, 1926.
- 14) Child Labour (Prohibition & Regulation) Act, 1986,
- 15) Inter-State Migrant Workmen's(Regulation of Employment &Conditions of Service)Act, 1979.
- 16) The Building and Other Construction workers (Regulation of Employment & Conditions of Service) Act, 1996 and the Cess Act of 1996,
- 17) Employee State Insurance Act, 1982,
- 18) The Tamil Nadu Manual Workers(Regulation of Employment and Conditions of Work)Act, 1982,
- 19) The Bonded Labour System (Abolition) Act, 1976,
- 20) The Employer's Liability Act, 1938.

PART V
SPECIAL CONDITIONS

1. The works which are not covered in the BOQ, but required for this scheme should be done by the contractor whenever required as supplemental works.
2. The Contractor shall pump or deliver additional quantity of water to the beneficiaries during festivals, emergencies, etc as directed by the TWAD Board Officials for which no additional payment will be made under the price schedule (Schedule.A.1.). The consumables for disinfection will be paid as per the rate in the BOQ.
3. If the reporting Data furnished by the Data operator under the Contractor is found to be False / Incorrect, necessary penalty (clause to be adopted) at the rate (as decided by the Executive Engineer) of Rs. 1,000 per instance.
4. Online Entry of daily pumping quantity should be consolidated, cross checked by the Supervisor/Technical Assistant and the data should be updated by the contractor in the TWAD web page in consultation with the section officer.
5. The EB reading should be noted / EB Demand should be received from the respective EB Section Office by the contractor and the same should be reported to the Section Officer, TWAD Board without any omission/delay.
6. Every month, the Water Demand raised should be distributed to the respective beneficiary of the TWAD Board and the acknowledgement of the demand should be reported to the section officer, TWAD Board. Then the Cheque / DD for the respective demand raised should be received from the beneficiaries and submitted to the Section officer, TWAD Board without any omission/delay by the contractor.
7. Contractor shall do watering of plants, trees, grass, etc., in the premises under the scope of this contract.
8. Any public representatives (Panchayat President, Union Chairman, District Chairman, M.L.A, M.P or any other socially responsible approaches) in connection with water supply problems they should be treated courteously and proper reply should be given.
9. No advance payment will be made.
10. Subletting of contract is not allowed under this contract.
11. Transfer of the contract is not permissible on any ground.

VIII. SPECIAL CONDITIONS OF CONTRACT

1. The pipes and specials, Mechanical, Electrical, ICA, and Miscellaneous spares & tools, test equipment and consumables etc are to be procured from the vendors on approval of Quality Assurance Plan (QAP) by the Engineer in-Charge under Hogenakkal Water Supply and Fluorosis Mitigation Project.
2. Monthly / bimonthly current consumption details for both HT & LT supplies are to be collected and submitted for preparation of TANGEDCO bill within 3 days from the generation of bill to avoid Belated Payment Surcharge (BPSC) or else the BPSC has to be borne by the Contractor.
3. Working of all type of Flow Meter / Water meter should be ensured, and if any repairs noticed, it should be rectified immediately so as to furnish the exact quantity of water supplied without any dispute. During the rectification period of water meter / flow meter, the quantity of supply will be arrived based on actual pumping hours or by discharge in case of gravity flow. If the flow meter / water meter is not repaired within 2 days, a penalty of Rs. 500/- per day will be levied until rectification.
4. Repairs to Horizontal Spilt Casing Centrifugal and Open Well submersible pump set should be rectified within seven days and shall be maintained in working condition always. If the pump sets are not repaired within seven days, a fine of Rs. 5,000/- will be levied for each day thereafter.
5. Repairs to Vertical turbine pump set should be rectified within thirty days and shall be maintained in working condition always. If the pump sets are not repaired within thirty days, a fine of Rs.10,000/- will be levied for each day thereafter.
6. At any instance, disinfection of treated water should be done without interruption as per standards. If chlorination is not done at any instance when the chlorine and power supply is available or due to non availability of Chlorine, a fine of Rs.50,000/- per day will be levied.
7. If the treated water quality is not maintained as per standards specified in the bid condition, a fine of Rs 25,000 per MLD will be levied until the standards are maintained.
8. The quantity of water drawn/supplied will be calculated monthly, based on the average quantity of water supplied daily. If the monthly quantity calculated is less than the average quantity, then liquidated damages at the proportionate rate of Rs. 25,000 per MLD for short supply in quantity will be levied and will be deducted in the ensuing bill of the contractor in one lump sum.
9. Liquidated damages at Rs 25,000 per MLD of supply or part thereof will be levied by the Employer for the quantity not supplied,
 - (a) When the leak or burst not attended promptly and the time of restoration of water supply exceeds 36 hours, then for the quantity not supplied after 36 hours in that particular reach till the rectification and restoration of water supply is made.
 - (b) When agreed operating staffs were not engaged and leading to non supply or lesser supply of water to the other four Packages from Madam MBR, and / or wasted by over flow of Master Balancing Reservoirs (MBRs) or Sumps.
 - (c) When any break down occurs due to non performance of mandatory preventive maintenance.
10. If the contractor has not initiated any action within 36 hours from the incidence of leak or burst, the same will be rectified with other agencies and double the cost of the rectification charges with centage @23.5% including eligible taxes will be deducted from the contractor's bill apart from the LD for the non supplied quantity until rectification and restoration as per sl.no 9(a).
11. Liquidated Damages is exempted to the contractor for the lesser quantity of water supplied to the beneficiaries on the following reasons which should also be approved by the Engineer / Employer.
 - a) Non availability of Power supply.

Tenderer

Chief Engineer, TWAD Board, Vellore

- b) When Raw Water turbidity level exceeds 50 NTU for more than 2 Hours.
 - c) When flow reduced and water levels goes below 247.400m in River Cauvery near Intake site.
 - d) When drawal is less in other Packages-II, III, IV & V from 240 LL Master Balancing Reservoir at Madam.
 - e) Any Force Majeure situation such as riots, War, Earthquake, Land slide, Cloud Burst etc., which leads to non-operating condition of the equipments.
12. In case of any damages / loss / fire, the contractor has to lodge police complaints, and the contractor is responsible to set right the damages / loss etc., immediately and ensure water supply, for which adequate insurance coverage should be provided or else the contractor has to bear the cost on his own.
 13. The contractor should establish full watch and ward for the safety of the infrastructures and is responsible for prevention of any illegal tapping from any of the pipe lines and has to remove the connections at his own cost and has to initiate and take legal action through police if required.
 14. The contractor is liable to be prosecuted under "Section 430 of IPC" in case of unauthorized stoppage of water supply.
 15. All the formalities with respect to the renewal of licenses should be done by the contractor like CEIG inspection, factory license, Department of Explosives for chlorine cylinder and other statutory departments for continuous functioning of the project and will be reimbursed by TWAD Board during Operation & Maintenance period.
 16. Necessary Periodical inspection once in a year should be arranged by the Contractor for the verification/Calibration of All Mechanical, Electrical, ICA equipments, including surge protection system, cathodic protection equipments etc., and the test result should be submitted to the Executive Engineer in charge. (Relay test, etc.). A fine of Rs.10,00,000 per year will be levied for any default in the above periodical inspection and tests as per standards.
 17. Preventive maintenance has to be carried out periodically as specified in the O&M manual forming part of the contract specification to safeguard the plant to prevent any break down. Therefore if any break down occurs due to non performance of mandatory preventive maintenance, then the consecutive defect or breakdown of plant has to be repaired or replaced at the contractor's own cost as per the QAP approved by the Engineer In charge.
 18. The Optical Fiber Cable laid by TWAD Board in between Intake site at Hogenakkal to 240 LL MBR at Madam along the Transmission main alignment should be periodically inspected to check for any damage and also cable joint must be rechecked by the expert personnel and the report to be submitted to the Executive Engineer in Charge. A fine of Rs. 1,00,000 per year will be levied for any default in the above periodical inspection and tests as per standards.
 19. Price Escalation is not allowed.
 20. Insurance for the Project assets, contractors' operating and supervisory staff, third party, Employer's personnel and the Employer's risk should be taken from the date of start of taking over of works for O&M and documents to be submitted within 15 days of issue of work order. This should be renewed every year without any lapse till the period of completion. Due to default of insurance, any loss to the property or life will have to be suitably compensated at Contractors own cost and risk as per the rules in force or as ordered by the court of law and TWAD Board will not take any responsibility in such cases.
 21. The contractor should furnish the list of employees, with their names, proposed to be employed by him Unauthorized persons other than reported should not enter in the scheme's premises in the capacity as agent etc., But the substitute of an employee could be permitted with specific orders.

22. No employee of the contractor shall stake claim for employment in TWAD Board at any point of time because of having worked as labourer in this CWSS. The contractor shall get an undertaking from his employee to this effect and furnish it to the Executive Engineer
23. Employment of child labour is forbidden.
24. If the employees sustain any injury while on duty due to accidents, no compensation will be paid by the TWAD Board.
25. The contractors shall be fully responsible for operating and maintaining the scheme in a safe & secure manner.
26. Subletting of contract:
Transfer of the contract is not permissible on any ground.
27. The agreement between the parties shall be for a period of 48 months, provided the contractor has in his possession a valid licence under the Contract Labour (Regulation and Abolition) Act.
28. If the contractor does not have a valid licence under the Act as aforesaid, then the agreement between the parties shall be terminated by the Board without any intimation or notice.
29. At the time of signing of the agreement between the parties, the contractor shall possess a valid licence under the Provisions of the Contract Labour (Regulation and Abolition) Act 1970 giving details of the work for which the contract labour is allowed to be supplied, details of the period of licence and the number of labours allowed to be supplied by the contractor.
30. If, at the time of signing of the agreement, the contractor is unable to produce a valid licence under the Contract Labour Act as aforesaid, he shall be deemed to be not eligible for the award of the contract and the contract shall be awarded to the next eligible tenderer.
31. It is expressly understood between the parties that the labour supplied by the contractor are the workman of the contractor and the Board has neither any privity of contract nor any employer-employee relation with them.
32. The contractor shall obey all the provisions of various laws including Labour Laws as applicable to them. If the Board suffer any consequences of whatsoever nature, monetary or otherwise, as a result of direct or indirect action or inaction of the contractor in failing to comply with or not properly complying with any law, rules, regulations, notifications, instructions, circulars, G.Os, Board Proceedings, etc. issued by the Government or Board or any other authority as applicable to them as mandated by the law or otherwise, the said laws shall be computed in terms of money and recovered from the contractor.
33. The Treated water quantity will be measured as per the Flow meter reading at the Booster Pumping Station (BPS) located at Kanavai in Reserve Forest area for Payment. In case, if flow meter at BPS is not working, flow meter reading of treated water pumping station at WTP will be considered for making Payment.
34. Whenever Additional Quantity required for Package-2, 3, 4 & 5 and instructed by the engineer, the Package-I Contractor should produce and supply additional quality.
35. The minimum water level of 2m out of 5.25m should be maintained at 240LL MBR at Madam. (Maximum 4 Pumps at each station running in Parallel).
36. Testing of water samples in Water Testing Lab at WTP at Yanaipallam should be carried out daily at two hours intervals per day, in addition to online analyzer data.
37. Patrolling of Transmission Main Alignment must be carried out periodically.
38. Air valves /Scour valves / Sluice valves and valve pits should be monitored periodically to prevent tampering and should be maintained in good working condition.

Tenderer

Chief Engineer, TWAD Board, Vellore

39. In the Transmission Main Alignment in Reserve Forest area, the bushes and jungles in the alignment (for a width of allotted lease land of 5.50m) should be cleaned and kept neat.
40. Department Quarters and other Amenities (Geyser/ Fan/ Sintex tank at Intake, Water Treatment Plant, Booster Pumping Station and Master Balancing reservoir at Madam etc.,) should be periodically maintained and kept in neat condition. If the same has to be occupied, the requisition may be given to the Engineer to bear the rent fixed by the Engineer.
41. Trespassers should not be allowed inside the Intake site, Water Treatment Plant, Booster Pumping Station, Master balancing reservoir and STP without the Permission of the Executive Engineer.
42. Functioning of CCTV cameras at Intake site (3 Nos), Water Treatment Plant (8 Nos), Booster Pumping Station (3 Nos) and Master Balancing Reservoir (2 Nos) (Total 16 Nos) should be ensured and vigilantly monitored.
43. Fire Alarm system at Intake Site, Water Treatment Plant, Booster Pumping Station and Master balancing Reservoir at Madam should be maintained periodically so as to avoid fire accidents if any.
44. Back Wash water and water from Sludge Drying Bed should be recycled at Water Treatment Plant. No Water is permitted to let out as wastage in the Reserve Forest area.
45. Disposal of Dry Sludge from Sludge Drying Bed at Water Treatment Plant to the dumping Yard should be done as shown by the TWAD Board officials upto a maximum distance of 20km.
46. Inventory Register / Day books have to be maintained properly for receipt and issue of spares, pipes etc.,
47. Daily pumped / delivered quantity to every tapping point wise and as a whole for the package have to be submitted with reference to electromagnetic flow meters.
48. Periodical cleaning of Leading Channel, MBRs, sumps have to be done with prior intimation to the Engineer without interruption of supply, for which registers in formats are to be maintained and got acknowledged by the Engineer.
49. Statutory Deductions will be carried out as per Government Order.
50. Contractor shall follow with TANGEDCO for dedicated supply and at no point the pump should be stopped unless some exceptional cases.
51. Reduction in payment is exempted to the Contractor for the lesser quantity of water supplied to the beneficiaries on the following reasons which should also be approved by the Engineer/ Employer.
 - a. Non availability of power supply for more than 6 hours in respect of 18 hours designed pumping and 12 hours in respect of 12 hours designed pumping or in the case of staggered power supply for the above mentioned designed pumping hours.
 - b. Any leak or burst when attended and water supply is restored within 24 hours.
 - c. When the availability of water at the drawal of first tapping point of this package is less than the designated.
 - d. Shifting and replacement of pipeline due to development activities of other departments.
 - e. Any force, Majeure situation such as riots, War, Earthquake, Land slide, Cloud Burst etc., which leads to non – operating condition of the equipment.

IX. Estimated List of Spares

a. Mechanical Spares

S. No	Item	Quantity	Unit
	VT PUMPS (TREATED WATER PUMPS) MODEL NO 600 T (3 STAGE)		
1	BEARING 29426E (SKF IMP)	1	No
2	BEARING 6328 M/C3	1	No
	VT PUMPS (RAW WATER PUMPS) MODEL NO 750 T		
3	BEARING 29324E (SKF IMP)	1	No
4	BEARING 6222 (SKF IMP)	1	No
5	Bearing No.NU324 ECM/C3 SKF IMPORT	1	No
6	BEARING 7322 BECBM (SKF IMP)	1	No
7	COUPLING PIN	14	Nos
8	RUBBER BUSH	14	Nos
9	TOP SHAFT SLEEVE	6	Nos
10	RATCHET PIN	12	Nos
11	IMPELLER RING	1	No
12	LINE SHAFT BEARING	1	No
	VT PUMPS (BOOSTER WATER PUMPS) MODEL NO 600 T (2 STAGE)		
13	BEARING 29324E (SKF IMP)	1	No
14	BEARING 6222 (SKF IMP)	1	No
15	BEARING 7324(SKF IMP)	1	No
16	Bearing No.NU324ECM/C3 SKF IMPORT	1	No
17	COUPLING PIN	14	Nos

Tenderer

Chief Engineer, TWAD Board, Vellore

18	RUBBER BUSH	14	Nos
19	RATCHET PIN	12	Nos
20	IMPELLER RING	1	No
21	LINE SHAFT BEARING	1	No
	AIR SCOUR BLOWER MODEL NO:RL500ACTR		
22	SET OF COUPLING OR V BELTS	8	SET
	Clarifier Purging Valves		
23	ACTUATOR FOR CLARIFIER PURGING VALVE., PNEUMATIC, ACTUATOR, MAX PR 8 BAR, TEMP 20 DEGREE TO 80 DEGREE	10	Nos
24	EPDM	30	Nos
25	Valve Flape	30	Nos
26	Flap shaft	30	Nos
	SPARES FOR R&D MULTIPLES METAL CAST VALVES		
27	SECTOR WORM GEAR	10	Nos
	SPARES FOR CHLORINATION SYSTEM 25 Kgs/Hr		
28	Spares for 25Kg/Hr capacity Chlorination system which includes one lot of Yoke valve :5 Nos, Copper tube:5 Nos, Vacuum gauge(0-0.760 mm/Hg Make:Baumer):3 Nos, Gas filter: 1 No, Media for gas filter :5 Pack, Pressure reducing Valve : 2 Nos, Automatic vacuum regulator:2 Nos, Drain valve: 3 Nos, Check Valve: 3Nos,63 mm throat for 63mm injector:6 Nos, Canister mask: 3 Nos, Leak arresting suit: 3 Nos and Lead washer : 100 Nos.	1	lot
	ELGI AIR COMPRESSOR		
29	CYLINDER HEAD 90 DIA	2	Nos
30	CYLINDER HEAD 50 DIA	2	Nos
31	CYLINDER 90 DIA	2	Nos
32	CYLINDER 50 DIA	2	Nos
33	PISTON 90 DIA	2	Nos

34	PISTON 50 DIA	2	Nos
35	COMPRESSOR ALL KIT	2	Nos
	EOT CRANE SPARES FOR THE PUMPING STATIONS & CHLORINATION BUILDING		
36	ELECTRO HYDRAULIC THRUSTER OPERATED BRAKE SUITABLE FOR 200MM DIA WITH 34 KG	3	Nos
37	10 TON MOTOR PINION	1	No
38	200 MM DIAMETER BRAKE DRUM	1	No
39	2 TON 190 BRAKE	1	No
40	2 TON CROSS TRAVEL GEAR BOX	1	No
41	RWPS EOT CRANE 200 mm dia break liner	1	No
42	TWPS EOT CRANE 200 mm dia break liner	1	No
43	BPS EOT CRANE 200 mm dia break liner	1	No
	SPARES FOR TYCO VALVES		
44	SEAL (STEM PACKING) FOR 500 MM F 631	1	No
45	DISC SCREW KIT FOR 500 MM F 631	1	No
46	SEAT FOR 500 MM F631	1	No
47	SEAL "O" RING FOR 500 MM F 631	5	Nos
48	SEAL (STEM PACKING) FOR 600 MM F 631	3	Nos
49	BEARING FOR 600MM F631	1	No
50	DISC SCREW KIT FOR 600 MM F 631	1	No
	R & D MULTIPLES METAL CAST VALVE		
51	BODY SEAT RING FOR DUAL PLATE CHECK VALVE, 600 DIA, PN 25	1	No
52	BODY SEAT RING FOR DUAL PLATE CHECK VALVE, 600 DIA, PN 10	1	No

b. Electrical Spares

S. No	Item	Qty	Unit
	33KV HT PANEL SPARES		
1	HT PT FUSE 33kv,3.15A	6	Nos
2	HT PT FUSE 36kv,2A	6	Nos
3	HT PT FUSE 11kv,3.15A	5	Nos
4	SOFT STARTER RATING 14.3-43A LINE VOLTAGE 200-480V AC 50W CONTROL VOLTAGE 100 - 240V AC SMC-3 150-C 43NBD	1	No
5	Auxiliary Contactor 230V AC(2NO+2NC) Size S00	1	No
6	Auxiliary Contactor 110V DC(2NO+2NC) Size S00	1	No
7	Auxiliary Contactor 230V AC(3NO+1NC) Size S00	1	No
8	Auxiliary Contactor 230V AC(4NO) Size S00	1	No
9	Auxiliary Contact Block for Contactor , 1NO	1	No
10	Auxiliary Contact Block for Contactor , 2NO	1	No
11	Auxiliary Contact Block for Contactor , 1NC	1	No
12	Auxiliary Contact Block , 1NO	1	No
13	ON DELAY with 1C/0 Contact(5-100 Sec) 24/200-240V AC 24V DC	1	No
14	Contactor,7A,220V AC, 3KW,Size S000 230V AC with 1NO	1	No
15	Contactor,12A,Size S0 230V AC with 1NO	1	No
16	Contactor,25A,3PH ,11KW	1	No

Tenderer

Chief Engineer, TWAD Board, Vellore

17	Contactora,65A,110V AC,3PH ,33KW- S3	1	No
18	1.1 to 1.9A O/L relay Direct Mounting size S00	1	No
19	1.4 to 2.0A O/L relay Direct Mounting size S00	1	No
20	2.2 to 3.2A O/L relay Direct Mounting size S00	1	No
21	9.0 to 12.5A O/L relay Direct Mounting size S00	1	No
22	1.8 to 2.80A O/L relay Direct Mounting size S00	1	No
23	2.2 to 3.2A O/L relay Direct Mounting size S00	1	No
24	4.5 to 6.5A O/L relay Direct Mounting size S00	1	No
25	5.5 to 8.0A O/L relay Direct Mounting size S00	1	No
26	7.0 to10.0A O/L relay Direct Mounting size S00	1	No
27	14.0 to 20.0A O/L relay Direct Mounting size S00	1	No
	33KV HT PANEL SPARES		
28	MICOMP/127 .01-8 ION 57-130V/AC 24-250V/DC	1	No
29	HT FUSE (For TWPS at WTP)	6	Nos
30	HT FUSE (For BPS)	6	Nos
31	HT FUSE (For RWPS)	6	Nos
	PIX-MV TYPE 6.6KV HT PANEL SPARES		
32	MICOMP220, 24-250VDC/24-240V AC 50/60Hz	1	Nos
33	MULTIFUNCTION METER,63.5V,3PHASE,4WIRE, 50HZ, RS485	3	Nos
	H.T. FCMA SPARES		
34	FCMA Thermister Relay (Flux Compensating Magnetic Amplifier)	12	Nos
35	Economy Resistor	3	Nos

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Chief Engineer, TWAD Board, Vellore

	L.T.PANEL SPARES		
36	Motorised Drive(220-250V AC/DC)	1	No
37	Motorised Drive(220-250V AC/DC)	1	No
38	MCCB 16A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	2	Nos
39	MCCB 32A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	2	Nos
40	MCCB 63A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	2	Nos
41	MCCB 100A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	1	No
42	MCCB 160A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	1	No
43	MCCB250A,3-POLE,25kA, 3VTI(Adjustable Overload & Short Circuit Settings).	1	No
44	MCCB 630A,3-POLE,36kA, main switching unit	2	Nos
45	MCCB 315A,4-POLE, kA, main switching unit	1	No
46	MCCB 200A,4-POLE, kA, main switching unit	1	No
47	MCCB 100A,4-POLE, kA, main switching unit	1	No
48	MCCB 100A,4-POLE, kA, main switching unit	1	No
49	MCCB 160A,4-POLE, kA, main switching unit	1	No
50	Soft starter, rating 28.3-85A, line voltage 200-480v AC, 50Hz, Control voltage 100-240v AC, SMC-3	1	No
51	Filter Capacitance	1	No
	Clustered Type Indicating lamp		
52	LED 110V DC Green 22.5DIA	2	Nos
53	LED 110V DC RED 22.5DIA	2	Nos

54	LED 110V DC AMBER 22.5DIA	2	Nos
55	LED 110V DC BLUE 22.5DIA	2	Nos
56	LED 110V DC WHITE 22.5DIA	1	No
57	LED 110V DC YELLOW 22.5DIA	1	No
	Indicating Lamp Complete Assembly		
58	LED 110V DC Green 22.5DIA	2	Nos
59	LED 110V DC RED 22.5DIA	2	Nos
60	LED 110V DC AMBER 22.5DIA	2	Nos
61	LED 110V DC BLUE 22.5DIA	2	Nos
62	LED 110V DC WHITE 22.5DIA	1	No
63	LED 110V DC YELLOW 22.5DIA	1	No
64	Ammeter (0-20A)CT Ratio:20/1A	1	No
65	Ammeter (0-60A)CT Ratio:60/5A	1	No
66	Ammeter (0-150A)CT Ratio:150/5A	1	No
67	Ammeter (0-100A)CT Ratio:100/5A	1	No
68	Ammeter (0-125A)CT Ratio:125/1A	1	No
69	Local/Remote Selector Switch,16A,250V AC/DC	2	Nos
70	Measuring and Monitoring relay ,3Phase Voltage, Sequence, loss Relay,380-480VAC,45VA	2	Nos

c. ICA Spares

S.No	Item Description	Quantity	Unit
1	4CH, Analog Input Module	1	No
2	4CH, Analog Output Module	1	No
3	16 Point, 24v DC Sink/Source input	2	Nos
4	16 Point, 24v DC Sink/Source Output	1	No
5	SMPS for Control Logics	2	Nos
6	Panel View Plus 700	2	Nos
7	Panel View Plus 700 control net Module	2	Nos
8	Panel View Plus 700 Ether net Module	1	No
9	Control net card for control Logic	1	No
10	POSITIONER	1	No
11	SOLENOID VALVE	1	No
12	FLUID CONTROL SYSTEM	1	No
13	FLUID CONTROL SYSTEM	1	No
14	SOLENOID COIL	1	No
15	Control net tap Communication cable	2	Nos
16	SITOP Power Supply Adaptor 24DC/12A	1	No
17	Communication cable	1	No
18	Lithium Battery 3v	1	No

Tenderer

Chief Engineer, TWAD Board, Vellore

19	Micro-Logicx 1400	1	No
20	SOLENOID VALVE	1	No
21	SOLENOID COIL	2	Nos
22	LIMIT SWITCH	1	No
23	ULTROSONI LEVEL CONTROLLER	1	No
24	VIBRATION TRANSMITTER	1	No
25	VIBRATION SENSOR	1	No
26	VIBRATION SENSOR CABLE	1	No
27	POINT I/O Terminal Base(1734TB)	5	Nos
28	Redundant Power Supply	1	No
29	Media Converter Intercom	2	Nos
30	RG6 Coaxial Connector for Control Net	3	Nos
31	Control net Adapter	2	Nos
32	24VDC-Power/ Bus Extension Module	1	No
33	Digital Input Module 24VDC 8Ch Sink	1	No
34	Analog Current Input Module 8Ch	1	No
35	Digital Input Module 24VDC 8Ch Source	1	No
36	Analog Current output Module 4Ch	1	No
37	Micro-Logicx Digital Output Module 8ch Source	1	No
38	Analog output 4 Channel	1	No
39	SLC 5/03, 5/04, & 5/05 RS -232 Programmer cable	1	No

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Chief Engineer, TWAD Board, Vellore

d. Miscellaneous Spares

S. No	Item Description	Quantity	Unit
	2x28W FTL T5 Fittings		
1	Fixtures	25	Nos
2	Luminaries	150	Nos
3	Electronic Ballast	60	Nos
	250W HIGHBAY MH FIXTURES		
4	Igniters	15	Nos
5	Electronic Ballast	15	Nos
6	Capacitor-33 MFD	18	Nos
7	Luminaries (Cylindrical type)	18	Nos
	150W HIGHBAY MH FIXTURES		
8	Igniters	14	Nos
9	Electronic Ballast	14	Nos
10	Capacitor-20 MFD	14	Nos
11	Luminaries (Cylindrical type)	14	Nos
	250W HPSV FLOOD LIGHT FIXTURES		
12	250W HPSV Flood light Fixtures	6	Nos
13	Igniters	24	Nos
14	Electronic Ballast	25	Nos
15	Capacitor-33 MFD	24	Nos
16	Luminaries (Tubular type)	25	Nos
	150W HPSV STREET LIGHT FIXTURES		
17	150W HPSV Flood light Fixtures	15	Nos
18	Igniters	15	Nos

19	Electronic Ballast-	15	Nos
20	Capacitor-20 MFD	15	Nos
21	Luminaries (Tubular type)	20	Nos
	Recess Mounted Mirror Optic Fixtures (2 X36 Watts)		
22	Electronic Ballast	20	Nos
23	Luminaries (Pin type)	50	Nos
	Recess Mounted Mirror Optic Fixtures (2 X18 Watts)		
24	Electronic Ballast-	15	Nos
25	Luminaries (Pin type)	15	Nos
	Distribution Boards		
26	6A-SP-MCB	15	Nos
27	16A-SP-MCB	10	Nos
28	6A-DP-MCB	10	Nos
29	16A-DP-MCB	10	Nos
30	32A-TPN-MCB	10	Nos
31	Emergency Light	18	Nos
32	33 KV POTTENTIAL TRANSFORMER 100VA	1	No
33	33KV CURRENT TRANSFORMER 150/1-1A	1	No
34	VACCUM INTERUPTER TYPE VG2 PT NO MST10SG200300NA	4	Nos
35	VOLTAGE TRANSFORMER PT 33KV /3/110, 3/110 3V INS CLASS B FREQUENCY 50 HZ	4	Nos
36	INSULATING ROD PT NO; MVIG00255-01	4	Nos
	Miscellaneous Item		
37	Grease for VT Pumps, Gates, Pumps, Agitator etc.,	100	kg
38	Oil for VT pumps, Servo 32	100	Ltrs
39	Oil for Compressor	70	Ltrs
40	Oli for HSC pumps	70	Ltrs
41	Oli for Blowers, Agitator, Mixtures, Thickner	70	Ltrs
42	Transformer Oil	1200	Ltrs

Tenderer

Chief Engineer, TWAD Board, Vellore

43	Epoxy paint GREEN	20	Ltrs
44	Epoxy primer	20	Ltrs
45	Epoxy Thinner	20	Ltrs
46	Lightning Arrester	4	Nos
47	Temperature Scanner	6	Nos
48	Hourmeter	16	Nos
49	Current Converter	6	Nos
50	Ammonium Molybdate	250	gm
51	Stannous Chloride	125	gm
52	Potassium Dihydrogen Phosphate	500	gm
53	Reagent Grade Phenol	500	gm
54	Sodium Nitroxide	200	gm
55	Trisodium citrate	500	gm
56	Sodium hypo chlorite (Chlorox)	2	Ltr
57	Anhydrous Ammonium Chloride	250	gm
58	Manganese Sulphate	600	gm
59	Anhydrous Sodium Fluoride	500	gm
60	Sodium 2 -(Parasulphenylazo)-1,8-Dihydroxy-3, 6-Napthalene disulfonate (SPADNS)	50	gm
61	Zirconyl Chloride Octahydrate	250	gm
62	Sodium Arsenite	250	gm

X . Model Formats

1.LETTER OF NEGOTIATION

In pursuance of negotiation with the Executive Engineer/Superintending Engineer/Chief Engineer of
Division/Circle/Region on

I/We agree to reduce the rates for the items in the BOQ as follows.

Sl.No.	Item No. in the BOQ	Reduced rate/unit
--------	---------------------	-------------------

Signature of Contractor

Tenderer

Chief Engineer, TWAD Board, Vellore

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD

2. Forwarding Slip to The Lump sum Agreement No.

1. Name of Work :
 Estimate Amount :
 Sanctioned in Original Estimate No. :
 Revised Estimate No. :
2. Name of Contractor and Address :
3. Original or Supplemental :
4. If Supplemental, Original Agreement No. :
5. Approximate value of work to be done under this Agreement :
6. If this is Supplemental, approximate value of works to be done under Original Agreement :
7. If bids have been called for, is the lowest tender accepted? :
 If not reasons to be recorded
8. Has the contractor; signed the divisional copy of TNBP and Its addenda volume brought upto date. :
9. Is data furnished for all items of works noted in the Schedule :
10. Are the rates in Agreement within the estimate rates or schedule of rates whichever is less and the Lump sum provision sufficient or likely to be exceeded. :

Tenderer

Chief Engineer, TWAD Board, Vellore

II. Additional Information**A. Original Agreement**

2. Original Agreement amount of tender excess and percentage over the estimate rate. :
2. If concessional rate of EMD & SD have been allowed ref. to sanction thereof :

B. Supplemental Agreement

1. Whether the approval of the competent authority has been obtained for the rates as required as per B.P.Ms.No.27/CMW/ dated 5.2.2002 :
2. If entrusted without tenders whether sanction is necessary with reference to total value of work covered by the supplemental agreement so far accepted. :

TAMILNADU WATER SUPPLY AND DRAINAGE BOARD

3. Form of Agreement (Lump sum)

Articles of Agreement made this-----

Day of -----
between Thiru-----

hereinafter referred to as the contractor which expression shall where the context so admits include his heirs, executors, administrators and legal representatives of the one part and the Tamil Nadu Water Supply and Drainage Board (hereinafter called the Employer) which expression shall where the context so admits include its successors in office and assigns) of the other part. Whereas the contractor delivered to the Employer the bid which was opened on ----

-----whereby the contractor offered and undertook to carryout the works specified under this contract and allied work, i.e. (name of work) -----

In the State of Tamil Nadu in India, and provide the works, materials matters and things described or mentioned in these presents at the prices set forth in the schedule annexed to such bid and the contractor also undertook to do all extra and varied works which might be ordered as part of the contract on the terms provided for in the conditions and specifications hereto annexed and the Employer accepted such tender in pursuance where of the parties hereto have entered into this contract.

And whereas the contractor in accordance with the terms of the said Bid has deposited in the Office of the -----Engineer, TWAD,-----
-----as performance security for the due and faithful performance by the contractor of this contract, the sum of Rs.------(Rupees-----
-----)

And whereas the contractor fully understands that on receipt of communication of acceptance of bid from the accepting authority, there emerges a valid contract between the contractor and the Employer represented by the Officer accepting the agreement and the bid documents, i.e. invitation for bids, letter of application, bill of quantities and other schedules, general conditions of the contract, technical specifications of the bid, negotiation letter, communications of acceptance of bid, shall constitute the contract for this purpose and be the foundation off rights of both the parties, as defined in clause 8.1 of "—Bid Documents "Now hereby agreed that in consideration of payment of the said sum of Rs. (Rupees) or such other sum as may be arrived at under the clause of the General conditions of the contract relating to payment by final measurement at unit prices, the contractor shall and well within the time specified in his bid thoroughly and efficiently and in a good workman like manner perform, provide, execute and do all the works, materials matters of things incidental to or necessary for the entire completion of the works specified under this contract and necessary works including all works shown in the drawings hereinafter referred to or described or set forth the said specifications and schedule hereto annexed and in accordance with such further drawings and instructions as the Engineer of the Board or other Engineer duly authorised in that behalf (therein after) and in the annexed documents referred to as the Engineer) shall at any time in accordance with the said schedule (Bill of Quantities) and specifications provide and give together, with any alterations in the works or additions thereto, in the time and manner in such schedule (Bill of Quantities) and specifications stipulated to the entire satisfaction of the Engineer, the Employer for themselves and their successors convenient and agree with the Contractor that during the progress of the works and on the completion of contract to the satisfaction of the Engineer, the Employer shall and will from time to time on receiving the certificates in writing of the Engineer pay to the contractor according to such certificates and the terms of this contract the price or sum mentioned in such certificates as due to the contractor under the terms of this contract subject nevertheless to

Tenderer

Chief Engineer, TWAD Board, Vellore

deductions or additions thereto or the refrom which may be lawfully made under terms of his contract. It is hereby mutually agreed and declared as follows.

- a) All certificates or notice or orders for items or for extra varied or altered works which are to be the subject of an extra or varied or altered works charge shall be in writing whether so described in the contract or not and unless in writing shall not be valid or binding or be of any effect whatsoever.
- b) The term contract include these presents and the invitation for bid, bid documents, bill of quantities and other schedules, general conditions and specifications hereto annexed and the plans drawings herein and hereafter referred to.
- c) If the contractor claims that the decisions or the instructions of the Employer are unjustified and that accordingly, he is entitled to extra payments on account thereof he shall forthwith notify this to the Employer to record his decisions and reasons therefor in writing and shall within two weeks state his claims in writing to the Employer thereafter. The Employer shall thereafter within four weeks of the receipt of the claim, reply to the points raised in the claim. Unless resolved by negotiation or discussions immediate
- d) thereafter, within further four weeks the question of liability for such payment will be treated as a dispute.
- e) In the contract whenever, there is as discretion or exercise of will, by the Employer during the progress of the work, the mode or manner of the exercise of discretion shall not be a matter for dispute.
- f) The decision of the Employer shall be final conclusive and binding on all, Parties to the Contract upon all questions relating to the meaning of specifications, designs, drawings and instructions, and as to the quality of workmanship or material used on the work or any matter arising out of or relating to the specifications, designs and drawings and instructions concerning the works or the erection of or failure to execute the same arising during the course of works. The above shall not be the subject matter of dispute and in no case shall the work be stopped consequent on such a dispute arising and the work shall also be carried out by the contractor strictly in accordance with the instructions of the Employer.
- g) In case any question, difference or dispute shall arise on ,matters other than clauses (d) and (e) above and except any of the excluded matters mentioned in bid documents touching the construction of any clause herein contained on the rights, duties and liabilities of the parties hereto or any other way touching or arising out of these presents, the same shall.

Settlement of dispute

Dispute Redressal Committee

In order to ensure a dispute Redressal mechanism, a Committee headed by the Managing Director / Joint Managing Director and consisting of Engineering Director, TWAD Board and Engineering Director, CMWSS Board as Member, will comprise the " Dispute Redressal Committee" for each package in order to resolve any disputes between the Employer / Engineer - incharge concerned and the contractor

- i) In the event of non settlement of any dispute by Dispute Redressal Committee arising between parties here to 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 contract is awarded and agreement is concluded and by no other court.
- ii) Provided always the contractor shall not except with the consent in writing of the Engineer in any way, delay in carrying out works in any such matter, question or dispute being referred to court but shall proceed with the works with all the diligence and shall until the decision of the Employer and no award of Competent Civil Court shall relieve the contractor of his obligations to adhere strictly to the instructions of the Engineer with regard to the actual carrying out of the works.
- g) Time shall be considered as essence of the contract and the contractor hereby agree to commence the work immediately after taking over of site or signing the agreement whichever happens earlier, complete the work within _____ months and to show progress at the stipulated milestone.

Tenderer

Chief Engineer, TWAD Board, Vellore

In witness where of the contractor and the Employer on behalf of the Board have caused their common seal to be affixed the day and year first above written Signed, sealed and delivered by the said.

In the presence of
Signature of Contractor
Name and Seal.

Signature, Name and
Designation of Witness.
Signed by on behalf of
TWAD Board.

Signed, Name and
Designation of Witness

ENGINEER
TWAD BOARD

4. No Correction/ Alteration Certificate

I/We certify that no Correction/alteration is made in the tender document downloaded from the website and shall abide by all the terms, conditions and specifications contained in the Bid Document

Signature of Bidder

Tenderer

Chief Engineer, TWAD Board, Vellore

5. PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)

To

The Executive Engineer, TWAD BOARD,

----- (Name of Employer)

----- (Address of Employer)

WHEREAS----- (name and address of contractor) (hereinafter called" the contractor" has undertaken, in pursuance of contract No.-----

----- Dated ----- to execute-----

----- (name of contract and brief description of works) hereinafter called -- the contract*

AND WHEREAS it has been stipulated by you in the said contract that the contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein, as security for compliance with his obligations in accordance with the contract.

AND WHEREAS the contractor has requested us to give the Bank Guarantee

AND WHEREAS we have agreed to give the contractor such a Bank Guarantee unconditionally and irrevocably to guarantee as primary obligator and not as mere surety, all the payments to the -----

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the contractor, upto a total of ----- (amount of Guarantee) ----- (amount in words such sum being payable in the types and proportion of currencies in which the contract price is payable, and we undertake to pay you unconditionally and irrevocably upon your first written demand and without cavil or argument, any sum or Sums within the limit of

----- (amount of Guarantee) as aforesaid without you needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contractor or of the Works to be performed thereunder or of any of the contract documents which may be made between you and the contractor shall in any way release as from the liability under this guarantee and we hereby waive notice of any such change, addition or modification.

The Bank Guarantee is drawn at -----branch of----- bank in -----Town in Tamil Nadu only.

This guarantee shall be valid until 28 days from the date of expiry of the defects liability period. '

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank -----

Address -----

Date -----

Tenderer

Chief Engineer, TWAD Board, Vellore

6. BID SECURITY (BANK GUARANTEE)

WHEREAS, _____ [*name of Bidder*] (hereinafter called "the Bidder") has submitted his Bid dated _____ [*date*] for the construction of _____ [*name of Contract*] (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that We _____ [*name of bank*] of _____ having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ [*name of Employer*] (hereinafter called "the Employer") in the sum of _____¹ for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ **2020**.

THE CONDITIONS of this obligation are:

- 1) If after Bid opening the Bidder withdraws his bid during the period of Bid validity specified in the Form of Bid;
or
- 2) If the Bidder having been notified of the acceptance of his bid by the Employer during the period of Bid validity:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
 - (c) does not accept the correction of the Bid Price pursuant to Clause 28.2;

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date _____² days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this guarantee should reach the Bank not later than the above date.

DATE _____

SIGNATURE OF THE BANK

WITNESS _____

SEAL _____

[signature, name, and address]

1. The Bidder should insert the amount of the guarantee in words and figures denominated in Indian Rupees. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

2. 45 days after the end of the validity period of the Bid.

Tenderer

Chief Engineer, TWAD Board, Vellore

XI. BILL OF QUANTITIES – (Volume – 8)

(To be furnished separately as Price Bid)

General

The Bill of Quantities shall contain items for the operation and maintenance of the Works to be carried out by the Contractor

The Bill of Quantities will be used to calculate the Contract Price. The contractor shall be paid for the quantum of work done at the rate quoted for each item in the Bill of Quantities.

Where there is a discrepancy between the rates in words and figures, the lesser of the two will only be taken in to consideration.

Where there is a discrepancy between the unit rate and line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern.

Where there is an arithmetical discrepancy in the page total as well as grand total, the corrected total by the Employer will govern

The rates quoted in the BOQ shall be for carrying out the work in conformity to the BIS, TNBP and Technical Specifications and other Terms and Conditions set out in the Bid Document

All pages in the BOQ should be signed without omission. All corrections should be properly attested by the Bidder.

Change in the Quantities - If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item/items, the rates as in the agreement for the relevant items shall be paid.

GST is applicable as per G.O. 296, Finance (Salaries) Dept. Dt. 09.10.2017, GOI, Ministry of Finance - Central Tax (Rate), New Delhi Notification No. 12/2017 / Dt: 28.06.2017 and 20/2017/ Dt. 22.08.2017 and as amended from time to time.

From every payment made to the firm/ contractor, deduction at source towards GST shall be made for civil works contract as per Government of India, Ministry of Finance/ Department of Revenue, New Delhi Notification No. 20 / 2017 – Central Tax (Rate) / Dt.22.08.2017 subject to issue of amendments from time to time.

Name of work: Operation and Maintenance of Hogenakkal Water supply and Fluorosis Mitigation Project in Dharmapuri and Krishnagiri Districts for the period of 48 months (From 01.04.2020 to 31.03.2024) – 3rd call - Package I

Item No.	Description of work	Probable Quantity Figures	TNBP No other specifications	Unit in Figures and words	Rates in Rs.		Amount in Rs.
					Figures	Words	
1	2	3	4	5	6	7	8
Vide Separate Sheets attached							

Tenderer

Chief Engineer, TWAD Board, Vellore