GOVERNMENT OF KERALA

KERALA RURAL WATER SUPPLY AND SANITATION AGENCY

(RAIN CENTRE)

-NAME OF WORK-

Constructing Open wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths), in Palakkad District. Phase –III activities

Tendered PAC	**: Rs 8,75,000/-**
Last date of online submission of tenders	**: 11.30 am on 20.12.2017**
Date of Tender opening	**: 12.30 pm on 22.12.2017**

Executive Director,
Project Management Unit-KRWSA
3rd Floor, PTC-Towers, SS Kovil Road,
Thampanoor, Thiruvananthapuram-1,
Phone No. 0471- 2337005,2320848

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GOVERNMENT OF KERALA
KERALA RURAL WATER SUPPLY AND SANITATION AGENCY
(RAIN CENTRE)
ELECTRONIC TENDER NOTICE
SECTION –I

Executive Director, KRWSA PMU, Thiruvananthapuram, Invites Competitive electronic Tenders for Constructing Open Wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths) in Palakkad district, Phase –III activities from Contractors having valid and eligible A/B/C/ Contract registration with Government of Kerala PWD/KWA/CPWD/Grama Panchayaths or other State Governments/Government of India for works as detailed in the table below.

e-Tender No.089/RC/2017/ KRWSA

1	Name of Work	Constructing Open Wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths), in Palakkad district, Phase –III activities
2	Nature of works	Constructing Open Wells, Supply and erection pipes including supply and erection of pump sets.
3	Location	Anganavadies functioning in Agali and Pudur GPs under Attappady ICDS Bolck in Palakkad district.
4	Tendered PAC	Rs 8,75,000/-
5	Fund Allocation	State Plan
6	Name of Office	Executive Director, PMU, Thiruvanathapuram.
7	Period of Completion	3 months
8	Earnest Money Deposit	Rs .22,000/-
9	Cost of Tender Documents + GST	Rs 2,500/- + GST
1	Pre-bid meeting	2.30 pm on 12-12-2017
11	Sale of Tender Documents	Can be down loaded from website www.etenders.kerala.gov.in
12	Offer Validity	90 days from the date of opening of tender.
13	Last date of online submission of tenders	11.30 am on 20.12.2017
14	Date of Tender opening	12.30 pm on 22.12.2017
15	Class of bidders	A ,B & C

Tender documents and tender schedule may be downloaded from the Kerala Government E Procurement Website www.etenders.kerala.gov.in. Bid submission fee and EMD mentioned above should be remitted through online payment mechanism for e-procurement system of Gov. of Kerala. Bidders are advised to visit the "Downloads" section of e-procurement website (www.etenders.kerala.gov.in) for detailed instructions on making online payment using internet banking facility of SBT or by using NEFT facility. The tenders shall be submitted electronically to the Executive Director, Project Management Unit, Thiruvanathapuram, in the method available at the web site www.etenders.kerala.gov.in. Tenders/bids shall be accepted only through online mode on the website and no manual submission of the same shall be entertained. All documents shall be submitted electronically by uploading before 11.30am on 20.12.2017. The original / attested copy of all documents shall be produced within three days of opening of the tender.

The tenderers can view/ download the tender notice and other tender documents, free of cost from the website. Intending tenderers may enrol themselves for e-tendering in the website www.etenders.kerala.gov.in. One time registration is valid for all tenders. The contractors who are registered for e-tendering and have valid password can only view/download the Tender Documents, The Tender Schedule shall be filled up in the prescribed format provided in tender document. For uploading the tender documents, the tenderer has to remit the amount towards cost of tender documents as well as the prescribed EMD through online payment mechanism for e-procurement system of Govt. of Kerala. Only those tender schedules which are downloaded from the website only will be considered.

Preliminary agreement in the prescribed form in Rs.200/- Kerala Stamp paper duly signed and sealed shall be uploaded without fail.

The tenders will be opened by the Executive Director, Project Management Unit, Thiruvanathapuram/ Authority in the presence of the bidders present at the time of opening. The bidders are advised to be present for the opening of tender.

The cost of tender form once paid for this tender is not refundable even if the tender is cancelled at any stage or the tenderer fails to upload his tender.
All other conditions same as prevailing in Kerala Rural Water Supply and Sanitation Agency regarding tenders are applicable to this tender also. Further details if required can be had from this office during working hours.

Place: Thiruvananthapuram
Date: 06-12-.2017

Executive Director,
Project Management Unit-KRWSA
3rd Floor, PTC-Towers, SS Kovil Road,
Tampanoor, Thiruvananthapuram-1,
Phone No. 0471- 2337005,2320848

SECTION - II

K R W S A FORM

OF TENDER G. W.

D. 84

PROJECT MANAGEMENT UNIT, KRWSA,
THIRUVANANTHAPURAM

Name of Work – Constructing Open Wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths) in Palakkad district, Phase – III activities. The programme is implemented with the financial support of Social Justice Department, Govt. of Kerala.

Date of Issue 06-12-2017

Name ……

Address of Tenderer ……

……..

……..

Details of EMD……

……..

K R W S A

Specifications
PART I – GENERAL

1. The rates tendered by a Contractor for the work shall include the cost of-

   (a) All labour and supervision thereof, all materials, tools, implements and plant of every description, adders, cordage, tackle etc. as well as the provision of safe and substantial scaffolding required for the proper execution of the work in conformity with the specifications for the various items of work.

   (b) Supplying the requisite agency with necessary equipments, to set out the work as well as to afford facilities for such examination of the work as the Authorized Officer may at any time consider desirable, as also to count weigh and assist in the measurement, or check measurement of the work or materials.

   (c) Providing and maintaining all temporary fences, shelters lights watchman and danger signal and such other precautions as are necessary for the protection of the work or materials, as well as to protect the public and those connected with the work from accidents at the site of, or on account of the work.

   (d) All sheds, mortar mills and mixing platform of every kind required for the proper execution of the work according to the specifications.

   (e) All fees and royalties of materials; and

   (f) Finally clearing away of all rubbish, surplus materials, plants etc. on completion of the work and pressing and levelling off and restoring the site to a tidy condition prior to handling over the work to the Director Technical or his authorized assistant and also its maintenance until so taken over.

2. In the case of suppliers of materials such as rubble, broken stones gravel sand etc. which may have to be measured prior to being used on the work, the Contractor must always stack or arrange them nearly on level ground or on ground cleared and leveled by him for the purpose in such manner as may be ordered by the Office-in-Charge so that they may be easily susceptible of inspection and measurement, the cost of such clearing leveling and stacking or arranging being included in the rates for work. Each stack must be straight and of uniform section throughout and of the dimensions specified by the Officer-in-charge, Materials not stacked or arranged in accordance with the instructions issued will not be measured and paid for.

3. The Contractor shall be bound to bear the expense of defense of any action or law preceding that may be brought by person for any injury sustained owing to neglect of above precautions in connection with the execution of the work, and to pay any damages and cost which may be awarded in consequence.

4. The Contractor shall also help himself out of any difficulties of penalties arising from interference with private property in the execution of the contract.

5. The tenderer should state whether he has all the plant necessary for the execution of the work. If in the opinion of the Director Technical, Contractor's own plant is neither sufficient not suitable for the proper execution of the work, the Department may supply

other available plant and recover reasonable hire for the same. The Director Technical decision in the matter shall be final and binding, on the Contractor.

6. Deleted

7. Deleted

8. Unless otherwise specially provided for in the contract, the Contractor shall own cost keep all portions of the work free from water whether due to springs, soakage or inclement weather and in a neat and sanitary condition and shall also see that drainage and sewage are prevented from entering the site of work on accumulating there in.

9. The Contractor shall be responsible for the proper use and bear the cost of protection of materials made over to him by the Department for use on the work and bear any loss from deterioration or from faulty workmanship or any other cause. The cost of materials thus allowed to deteriorate amounting as it does to an excess issue over sanctioned quantities will be recovered at rates 20 per cent over the actual cost. The orders of the Director Technical in the matter shall be final and binding on the Contractor.

10. The Contractor shall be responsible to see that the level or other pegs, profiles bench marks, masonry pillars or other marks setup by the Department for guidance in the execution of the work are not disbursed removed or destroyed. If any such marks are in the opinion of the Director Technical found disbursed, removed as destroyed, they will be replaced by the department at the cost of the Contractor.

11. Any materials brought to the site of work, or any work done by the Contractor but rejected by the Officer-in-charge being not up to the specifications shall in the case of materials supplied be then and there removed from or broken up at the site of work, and in the case of work done be dismantled or rectified at the expenses of the Contractor as may be ordered by the Officer-in-charge.

12. In all case whether so specified in the contract or not, the work shall be executed in strict accordance with the Contractor's accepted tender and these specifications and with each such further drawings and specifications and orders as may from time to time be issued by the Director Technical.

13. Whenever the Contractor is ordered by the Director Technical or his authorized assistant or subordinate to execute any item of the work which is not in the tender it shall be the Contractors duty to get a special price arranged for the item and to see that it is written in the work spot order book (which shall be provided by the Director Technical and kept in the work by the subordinate in charge) and that this order is initialled and dated by the Contractor and the Officer ordering that particular item of work. For any extra item executed by the Contractor and not so entered in the work spot order book and initialled both by the Contractor and the Authorized Officer ordering such extra item that Contractor shall have no claim for extra payment.

14. Any dispute or difference that may arise between the Implementing Officer and the Contractor on account of the contract shall at the instance of either party be referred to the Executive Director KRWSA, PMU, Thiruvananthapuram, whose decision given in writing shall be final, conclusive and binding. The Director Technical, KRWSA may at his discretion delegate writing to any of his subordinates any of his powers regarding these specifications.

15. "From the „on account" payments deductions shall be made by the Authority at the rate 1% of the amount of including cost of departmental materials supplied towards contribution to the Kerala Construction Welfare Fund Board".

SPECIFICATIONS

Part (I) Materials

Part (II) Work

(As current in the KRWSA)

Signature of Tenderer……..

Date……..

Sd/-

EXECUTIVE DIRECTOR, KRWSA,
PMU,THIRUVANATHAPURAM.

SECTION - III

K R W S A

FORM OF TENDER

Name of Work – Constructing Open Wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths), in Palakkad district, Phase – III activities. The programme is implemented with the financial support of Social Justice Department, Govt. of Kerala.

To
Sir,

1. I/We do hereby tender to execute the works enumerated in the schedule accompanying in accordance with the terms in your Tender notification dated 06.12.2017 and specifications and conditions of contract in force in KRWSA.
2. Copy of the specifications duly signed is also enclosed.
3. I/We further agree to complete the whole work in 3 months from date of issue of selection notice /or in the case of piece works, maintain the maximum rate of progress specified in the tender schedule.
4. I/We do/do not agree to accept and carry out such portion of the work included in my/our tender as may be allotted to me/us if the whole work be not given to me/us.
5. In consideration of I/we being registered as a contractor in the Government of Kerala PWD/KWA/CPWD/Grama Panchayaths or other State Governments/Government of India invited to tender. I/We agree to keep the tender open for acceptance 90 days from the date of opening thereof and not to make any modification in its terms and conditions which are not acceptable to KRWSA.

   A sum of Rs ..... is hereby forwarded in DD/Bank Guarantee at …… receipt of a Scheduled Bank as earnest money. If I/we fail to keep the tender open as aforesaid or make any modification, in the terms and conditions of the tender which are not acceptable to KRWSA

   OR

   If after the tender is accepted, I/We fail to execute the agreement as provided in clause No.13 of Tender Notifications or to commence the execution of the works as provided in the conditions. I/we agree that the KRWSA shall without prejudice to any other right or remedy be at liberty to forfeit the said earnest money absolutely, and also recover from me/us the entire loss that may be caused to the KRWSA by the retender or rearrangement of the work or otherwise under the provisions of the Revenue Recovery Act of otherwise.

Encl:

i. Tender Schedule
ii. Earnest Money Rs.
iii. Signed copy of specification

iv. Signed copy of plan :

Usual signature of tenderer……..

Full Name:……

Nationality……..

Place and Residence ……..

Date of submission ……..

SECTION - IV

PART I & II. TECHNICAL SPECIFICATIONS.

All materials required for the works shall be procured and supplied by the Contractor himself. The materials shall be of good quality and conforming to relevant BIS specification. The materials which are classified for ISI marking should be supplied with ISI marking only.

I. Cement and Steel.

I.I The entire quantity of cement and steel required for the work will be procured by the Contractor. The Contractor is responsible for all transport and storage of the materials and shall bear all related cost. The Employer shall be entitled at any reasonable time to examine the cement and steel supplied by the contractor.

I.2.The cement procured by the contractor shall comply with the requirements of IS 269/1976 with the latest revision thereof for ordinary port land cement and IS 8112/1989 with the latest revision thereof for 43 grade ordinary Portland cement. It shall be of the best normal setting quality unless especially rapid hardening or quick setting quality if expressly instructed by the Engineer to be supplied. Each bag shall bear ISI Certification mark and as per specification no.10 of TNBP volume 1.

1.3. The steel bars shall comply with the requirements set forth in the IS 432 Part 1, IS 1139, IS 1786 as the case may be with the latest revision thereof and the test as described for ultimate tensile strength, bond test and elongation tests All reinforcing steel shall be clean and free from oil, grease, loose scales or rust or other coatings of any character which would reduce or destroy the band. Each band containing the bars shall bear the ISI Certification marks.

1.4. The Cement/steel shall be tested in nearby laboratories of Polytechnic or Engineering College by the Employer. Two samples should be taken by the Engineer in charge in the presence of the contractor or his authorized representatives or the technical personnel employed by the Contractor as in the Agreement. The contractor shall without extra cost, provide samples and cooperate in the testing of the cement. /steel. One sample shall be got tested and the other sample shall be retained by making clear identification in the sample by the Engineer in charge so as to identify at a later date. The cost of such test shall be borne by the contractor.

1.5. All cement shall be procured in bags and shall be stored in a dry place for which the contractor shall be responsible. Consignment of bagged cement shall be property stacked in a manner which will permit easy access for inspection and definite identification. Cement shall be used in approximately in the chronological order in which it is received ,but cement that has been stored for a period longer than 4 months from the date of initial sampling shall not be used unless it has been retested at the expenses of the contractor and passed by the Engineer in charge as good quality on the retest. Cement aged more than 180 days from the date of initial sampling shall be rejected.

1.6. Cement which has become caked or perished shall on no account be used on the works and shall be rejected, although the Engineer may have passed any consignment if he finds that any deterioration in the quality thereon has taken place.

1.7. A record of the quantity of cement/steel procured with the name of dealer, bill number and date shall be maintained by the contractor. This should be produced for examination by the Engineer in charge at any time. The age of the cement shall be reckoned from the date of manufacture and it shall be verified by the Engineer in charge.

1.8. The rejected consignment of cement and steel should be removed from the site within two days.

2. Aggregates.

2.1 Sand for use in masonry and plaster works shall confirm in relevant specification in TNBP (Specification No. 7) and I.S.2116/1985, I.S.1542/1977.Due to restriction in Mining River sand M-Sand approved by the Engineer in Charge can be used.

2.2 The course and fine aggregates for concrete shall conform to I, S, 383/1970 and as specified in the relevant clauses of I.S.456/1978. Other aggregates free from deleterious materials shall be used at the concurrence and approval of the Engineer after sufficient tests have been carried out at the contractors cost.

2.3. The maximum quantities of deleterious materials in the aggregates, as determined in accordance with I. S. 2386/(Part II/1963 shall not exceed the limits given in table 1 of I. S. 383. Unless otherwise specified all course aggregate in R CC shall be graded aggregate of 20 mm nominal size. All aggregates shall be stored in hard impervious surface to ensure exclusion of all foreign materials and as per IS 4082/1977 and specification no 5 of TNBP Volume 1.

3. Water required for Construction.

3.1. The water used in the construction shall be of potable quality and shall be tested at the contractor"s cost. The contractor has to make his own arrangements at his cost for water required for construction, testing, filling, etc., either from local bodies or from elsewhere by paying the charges directly and arranging tanker etc., as per necessity. No claim for extra payment on account of non availability of water nearby extra lead for bringing water shall be entertained. All required piping arrangements and pumping if required for water shall be made by the contractor at his cost. Water for mortar mixing and curing of concrete shall be free from harmful mater or other substances that may be deleterious to concrete or steel and taken from a source approved by the Engineer. Water for mixing and curing shall conform to the provisions in the clause 4.3 of IS 456/2000

4. Admixtures.

Only where a beneficial effect is produced shall any admixture be used and that too after test has been carried out to convince the Engineer that no harmful effect will be produced by the use of such admixture and after approval by the Engineer. The admixture shall conform to IS 9103/1972.

5. Form work and Centering

5.1.1 Steel /wooden form centering shall be used. If wooden form work is used, it shall consist of planks not less than 40mm thick and strong props. This shall be provided complying

with clause 10 of IS 456/1978 and specification no. 30.8 of TNBP. The timber for form works shall be best hard wood and got approved by the Engineer in charge. This shall be deemed to be included in the items of contract even otherwise specified.

6. Separator (Cover Block)

6.1.1 For bottom cover of beams, slabs etc., separators of pre cast cement mortar blocks of suitable size with wire embedment as directed shall be used and tied to the reinforcement. Between layers of reinforcements, separators consisting of pieces of bars of suitable diameter shall be used. The required cover shall be provided as per clause 24-4 of IS 456/2000

7. Pipes, Specials and Valves.

7.1 General.

7.1.1. All types of pipes required for the works should be of good quality conforming to relevant BIS and should be procured from reputed manufacturer. Each pipe should bear the trade mark of the manufacturer, the nominal diameter, class, weight, batch number and the last two digits of the year of manufacture suitably and legibly marked on it. The Engineer shall have the right to conduct any test to ascertain the quality of the pipes supplied by the contractor. The contractor should make all necessary arrangements for testing the pipes. All the charges and expenses towards the testing shall be borne by the contractor. The materials which are classified for ISI marking should be supplied with ISI marking only.

7.1.2. If on examination of any sample from any portion of the supply, the material is found to be sub standard and not fully in accordance with the relevant specification, the entire consignment shall be rejected. In case of doubt whether the materials confirm to the specification or not, the decision of the Director (Technical) shall be final.

7.2 D.I. Pipes

7.2.1 D.I. pipes shall be procured from the reputed manufacturer and the pipe shall conform to IS 8329/2000. The pipes shall be lined with cement mortar and bear ISI mark. The test certificate furnished by the manufacturer should be produced.

7.2.2 The successful contractor shall obtain after executing agreement an MOU from the manufacturer agreeing to supply IS marked pipes strictly complying to the specifications, guaranteeing the pipes for a maximum period of two years. The MOU should also contain willingness of manufacturer to conduct Factory inspection of the pipes.

7.2.3 The Engineer shall have the right to test the pipes (post delivery) at Labs approved by KRWSA for the quality and conformity with specification wherever felt necessary. The Contractor shall replace the pipes if quality test fails.

7.2.4 The successful contractor shall get the pre-delivery inspection at factory got conducted by the KRWSA approved inspection agency.

7.3 GI pipes.

7.3.2 G I pipes should be procured by the contractor from reputed manufacturers or from their authorized dealers and should conform to IS 1239/part 1, namely the inner and outer diameter, length, weight and galvanization. The pipes which are found to be not conforming to relevant specification shall be rejected by the Engineer-in-charge. Guarantee shall be obtained from manufacturer for two years.

7.4 CI D/F pipes.

7.4.1. The CI D/F pipes procured for use in the work should conform to the relevant BIS specification and suitable for use in the work.

7.5. Valves.

7.5.1 The Contractor should procure reputed make of sluice valves. scour, reflux valves, non return valves, pressure release valves and air valves from the manufacturer or his authorized dealer and they should conform to the relevant BIS specification and suitable for use in the work . The valves shall bear ISI marks. Pressure release valves will be provided so as to minimize high residual heads and equalize the pressure in the system to near uniform pattern. Pressure rating for valves shall be PN.1

7.6 DI/CI/GI Specials and Fittings shall be in conformity with relevant B.I.S. specification The Specials and fittings should be in conformity to the relevant BIS specification.

7.6.0 Testing of Pipes

7.6.1 The manufacturer test certificate, third party inspection certificate by agency approved by KRWSA should be produced by the contractor for the pipes used in the work. The engineer shall have the right to test the pipes, wherever felt necessary for its quality. All testing charges should be borne by the contractor.

7.6.2 Testing of materials to be used in works, for the quality of finished items shall generally be done by the contractor at his own cost in the laboratory approved by the Employer by providing requisite material transport of test specimen and other assistance required thereof.

V (2). CIVIL WORKS.

1. General.

The scope of work for the contractor under the contract for civil works include all civil constructions works, including excavation, foundation, buildings, trenches all water retaining structures including sumps, weir, together with ducts and piping etc. and clearing of the site after completion of the work. The limits; of the contract, the provision of space, shall be the same as shown on the tender drawings and as description in the works description of the tender documents.

The civil works shall be carried out in accordance with the National Building Codes, the Kerala PWD (B&R) specifications and explanatory notes, and TamilNadu Building practice (TNPB). In case of any variation between the PWD specifications and specifications given

here, the latter shall prevail. In case where the PWD specification and the specifications given; below are silent about any aspects in respect of any item, the work shall be carried out as per the relevant. IS codes of practice in the latest version and as per sound engineering practice.

The excavation items will include; all lifts, lateral leads within limits of work, labour for dewatering, shoring wherever necessary, backfilling around completed structures and disposal of surplus; soil as directed by Engineer-in Charge. If any road is dug up for any purpose whatsoever, the contractor shall reinstate it to the standard required by the Engineer-in-Charge or the Statutory Body, at no extra cost with the same materials.

Where any provision of the TNBP is repugnant to or at variance with any provision under BIS or description of work, technical specifications and conditions of contract, the provisions of the latter shall be deemed to supercede the provision of the TNBP

The contractor shall programme his construction activities in such a manner that all inlet and outlet arrangements are ready for testing purposes to avoid any delays.

1.1. Design & Drawings

The contractor shall design and construct all civil works in accordance with the standard specification. All design calculations, drawings for the plant components including site plan, general lay outs, architectural drawings with isometric views will be submitted for the approval of the Engineer-in-Charge. The contractors shall alter/modify/the design based on the directions of the engineer and the decision of engineer is final and binding on the contractor. Special attention shall be given to the climate of the project area before planning the constructional structures. Notwithstanding any approval by the Engineer/Consultant, contractor is solely responsible for the performance and structural safety/stability of the equipment/structures under the contract.

1.2 Foundations:-

Soil particulars available at site are enclosed. The contractor shall design the foundations for structures as per the site conditions. The designs shall be got approved from the Engineer-in-Charge. Tests on steel (mild and high tensile (TOR) as per IS: 1786 to establish the ultimate tensile strength, yield stress, percentage elongation and chemical composition.

In additional to the above tests, the Engineer-in-Charge or his representative, shall request any other tests to be carried out from time to time as per the Indian standards or the Kerala PWD specifications, at no extra cost. All cost of testing materials, collection, preparation & testing of samples during execution shall be borne by the contractor and the contract price shall include all such charges.

1.3 Check for Reinforcement and concreting

All reinforcement shall be checked and recorded prior to pouring of concrete, by a representative of the Engineer-in-Charge. Similarly, the entire concrete pouring work shall be done in the presence of an engineer"s representative. The contractor shall therefore, give a notice of minimum three days to the Engineer-in-Charge or his representative, such that the works can be checked by him or his representative.

Main standards for Civil Works

Some of the important IS codes referred during execution of the work are as follows:

IS: 3764	- Safety code for excavation works
IS: 3720	- Methods of tests for soils Concrete Works
IS: 280	- Mild Steel wire for general engineering purposes
IS: 269/8112	- Portland cement/OPC-Grade 43
IS: 383	- Coarse and fine aggregate
IS: 432	- Medium tension steel bars and hard drawn steel wire.
IS: 456	- Code of Practice for plain and reinforced concrete.
IS: 516	- Methods of testing for strength of concrete
IS: 1199	- Method of sampling and analysis of concrete
IS: 1566	- Fabric reinforcement
IS: 1786	- High strength deformed bars for concrete reinforcement
IS: 2062	- Structural Steel
IS: 2386	- Methods of tests for aggregates of concrete
IS: 2506	-Code of practice for bending and fixing of bars for Concrete reinforcement
IS 3370	- Code of Practice for concrete structures for the storage of liquids.

1.4 Building works

IS 1567 -Code of Practice for construction of stone masonry General

IS: 1200 -Method of Measurement

2. Earth work.

2.1. Specification.

Tamil Nadu Detailed Building Practice (specification No.23 to the extent applicable) shall be followed for earthwork excavation.

2.2. Conveyance.

The surplus excavated earth, blasted rubble etc., shall be conveyed and deposited in the Panchayath lands, within 150m of work site and as directed by the Engineer in charge.

2.3. Stacking.

Where the location of the work is such and does not permit the deposition of excavated earth while digging trenches for laying pipes, the excavated earth should be conveyed to a convenient place and deposited there temporarily, as directed by the Engineer-in-charge. Such deposited soil shall be reconvened to the site of work for the purpose of refilling of trenches, if it is suitable for refilling. The unit rate for trench work of excavated and refilling shall include the cost of such operation.

2.4 Disposal of surplus Earth.

The excavated soil which is surplus to that required for filling and after allowing for settlement will have to be removed, spread and sectioned at places shown on the site during

excavation for purpose of widening or leveling the road. Sectioning is to be done as detailed in TNBP, It is to be understood that no extra payment, will be made for this and the unit rate for trench work of excavation and refilling shall made for this and the unit rate for trench work of excavation and refilling shall include the cost removal of surplus earth to disposal site approved by the Engineer in charge, its spreading and sectioning at the bidder"s expense.

2.5 Shoring, Strutting and Baling out water.

The rate for excavation of trench work shall include charges of shoring, strutting, bailing out water wherever necessary and no extra payment will be made for any of these contingent works. While baling out water, care should be taken to see that the bailed out water is properly canalized to flow away without stagnation or inundating the adjoining road surfaces and properties.

3. Concrete.

3.1. Specification.

Concrete for use in the works shall generally comply with TNBP (specification No.30) and the relevant BIS. The concrete mix shall be in specified proportions satisfying the maximum aggregate size, water cement ratio and required cube strength and workability as per IS 456-1978. Such concrete must be adequately vibrated to form solid mass without voids. The entire concreting works should be done only with the prior approval and in the presence of Engineer-in-charge.

3.2. Mixing Concrete.

The concrete shall be proportioned as far as cement and aggregates are considered by volume. The amount of water required being measured either by weight or volume the adjustments must be made to frequent intervals at the discretion of the Engineer or his assistant to account for the moisture content of the aggregates. The mixing operation shall be performed only in a mechanical concrete mixer and shall continue until the whole batch of uniform consistency and colour. The mixing of concrete shall be done in accordance with clause 8 and 9 of IS 456-2000.

3.3. Transporting, Placing and Compacting Concrete.

3.3.1. Transportation, placing and compaction of concrete mix by mechanical vibrators shall be done in accordance with clause 12 of IS 456-2000. It is imperative that all concreting operations be done rapidly and efficiently with minimum rehandling and adequate manpower shall therefore be employed to ensure this.

3.3.2. The forms shall be first cleaned and moistened before placing concrete.

3.3.3. The mix should not be dropped from such a height as it may cause segregation and air entrainment. When the mix is placed in position, no further water shall be added to provided easier workability.

3.3.4. No concrete mix shall be used for the work if it has been left for a period exceeding its initial setting time before being deposited and vibrated into its final position in the member.

3.3.5. While one concrete is being placed in position it shall be immediately spread and ramped sufficiently and suitable to attain dense and complete filling of all spaces between and around the reinforcement and in to the corners of form work for ensuring a solid mass entirely free from voids.

3.3.6. Construction joints required in any of the structural members shall be provided generally complying with clause 12.4 of IS 456-2000 and as directed by the Engineer-in-charge.. The efficiency of tempering and consolidation will be judged by complete absence of air pockets, voids and honey combing after removal of form works.

3.4.0 Curing.

3.4.1. Curing shall be done to avoid excess shrinkage or harmful effect to the members generally complying with clause 12.5 of IS 456-2000.

3.4.2. The method adopted shall be effective and any special method used must be approved by the Engineer and be subject to complete supervision.

3.4.3. Any deficiency in concreting such as cracking, excessive honey combing exposure of reinforcement or other fault which entail replacement of the defective part by fresh concrete and whatever remedy reasonable required without hampering the structural safety and architectural concept, all at the cost of contractor.

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3.5. Removal of Form Work.

3,5,1. Removal of form work shall be done as per TNBP and BIS and as directed by the engineer in such a manner that no damage is caused to the structures. The stripping time shall not be less than that indicated in clause 10.3 of IS 456-2000.

3.6. Testing of Concrete

3.6.1. During the progress of construction sampling, preparation of test specimens, curing and testing of concrete shall be conducted in accordance with IS 1199 and IS 516, to determine whether the concrete being produced complies with the strength requirements as specified. At least one slump test shall be carried out for every compressive strength test carried out or as directed by the Engineer. Six No.15 cm cubes shall be made for each cubic meter or portion thereof or for each proper grade of concrete. This number may be increased at the discretion of the Engineer. Six specimens shall preferably by prepared from different batches, three being tested after 7 days and the remaining three being tested at 28 days; The contractor shall provide, at his own expense, all apparatus, labour and arrange for testing at a laboratory, approved by the Engineer in Charge.

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3.6.2. In addition to the above tests, any other test which may if desired by the Engineer-in-charge be carried out from time to time as per relevant specifications at the cost of contractor. In case the concrete does not meet the strength required, all corrective measures shall be taken at once at the contractor"s cost.

3.6.3. The inspection and testing of structures shall be done in accordance with clause 16 of IS 3370 volume I water Retaining Structures

3.6.4. Acceptance of Concrete

The concrete tested in accordance with "Testing of Concrete" clause above shall meet the criteria for acceptance of concrete as per IS 456. The strength of concrete shall be the average strength of three specimens tested at 28 days and conform to strength requirements for different grades of concrete. If the advance 7 days tests show crushing strengths that are too low, corrective measures shall be taken at one at the Engineer's direction, without waiting for the results of the 28 days tests.

3.6.6 Failure to meet strength requirements

In case where concrete tested fails to meet the test requirements, the Engineer-in-charge shall have the right to require any one or all the following additional tests. These shall be carried out by the contractor at his own expense. The Engineer in charge shall be the final authority for interpreting the results and shall decide upon the acceptance or otherwise.

- Curing and load testing of the concrete member concerned represented by the test which failed.

- Replacement of any portions of the structure. No payment shall be made for the dismantling of the concrete, relevant framework or reinforced shall be made. Embedded

- Fixtures and reinforcement of adjoining structures damaged during dismantling shall be made good to the contractor at his own expenses.

- Extended curing of the structure of the concrete represented by the specimen.

- Collection and testing of a core specimen form the hardened concrete. The location number and size of such specimen shall be taken as directed by the Engineer.

- Any other test i.e., ultrasonic and/or rebound hammer tests to be decided by the Engineer, at the contractor"s own cost.

4. Masonry

All masonry works such as Random Rubble/Brick work must be done as per TNBP Specification and Bid schedule specification.

5. Plastering.

5.1 Plastering would be 12mm, 15mm and 20mm thick cement plaster .either plain or waterproof as per specification may be provided.

5.2 The plastering items shall be executed in thickness and cement mortar of proportion as detailed in respective items in the BOQ. Similarly the plastering shall be either ordinary or waterproof as specified in respective item in the BOQ.

5.3 In case of water proof plaster standard approved water proofing compound shall be mixed in cement mortar in required percentage as directed and then the plaster is applied.

5.4 The finishing shall be either smooth or rough as may be directed by the Engineer unless otherwise specifically mentioned in the BOQ.

5.5 Neat finish wherever directed by the Engineer shall be done at no extra cost.

5.6 Curing and watering shall be one as directed and plaster shall be in alignment and level. Any sub standard work is liable to be rejected and shall have to be re-done at contractors cost.

5.6.1 Sand to be used shall be of approved quality only. Cost of all scaffolding shall be included in the rates quoted in the BOQ.

6 Flooring.

6.1. 75mm thick cement concrete 1:4:8 shall be provided for flooring, the size of metal shall not be more than 40mm and it shall be properly graded. A thin coat of very fine plaster shall be provided on top to give a smooth finish. The marking of false grooves to surfaces as directed includes the cost of labour.

7 Doors and Windows.

7.1.1 Sizes shown on drawings are clear openings in masonry and not the shutter's size. These sizes shown on drawings are, therefore, inclusive of required frame sizes and doors windows, etc., and shall be manufactured, accordingly. If sizes bigger than shown in drawings are manufactured, as instructed specifically in writing they shall be measured and paid for accordingly.

7.1.2 The work shall be executed as per the size of frame thickness of shutter type viz. Plain planked panelled, glazed etc., and fixture, etc., as described in tender item. Iron bars for windows and ventilators are to be provided if specifically mentioned in the tender item at Contractor's cost. Specifications in TNBP shall be applicable.

7.1.3 The design of shutters and quality of wood shall be got approved form the Engineer-in-charge before manufacture. The joints shall be perfect.

7.2 Part of wood embedded in masonry shall be painted with the tar. The frames of doors, windows, ventilators, etc., shall have proper hold -fasts embedded in masonry.

7.5. Whenever iron bar is to be provided as per tender item the rate thereof is included in tender item. The painting shall be done as prescribed in tender item. No painting, however, shall be permitted till the wood work is approved by the Engineer-in-charge.

7.6 Any substandard work not conforming to the specifications are liable to be outright rejected and Engineer in charge"s decision in such case shall be final and binding on the Contractor.

7.7 The mode of measurement shall be on area units as mentioned in BoQ.

8 Painting.

8.1. The work shall be carried out as per the description of the tender item and as directed by Engineer- in-charge.

It shall be white washing, distempering and/or snowcem painting.

Shade and make shall be as directed by the Engineer and for decorative purpose. Engineer may ask for different shades to be provided for different components or different parts of the same component which the Contractor shall have to do within his tendered rate only at no extra cost to the Employer. Cost of priming coat as directed, scaffolding etc., shall be included in the tender rate. The work shall be executed as per the specifications of TNBP for painting.

In general, all items of works must be done as per TNBP specifications and bid schedule specifications.

V(3). PIPE LAYING WORKS

1. General

1.1 The earthwork for the pipe laying work shall generally conform to the details given below.

Sl. No.	Dia. Of pipe in millimeter		Depth of bottom of pipe below ground level in centimeter	Width of trench in centimeter.
1.	4	25mm PVC CL6	60	30
2.	6	32mm PVC CL6	90	30
3.	9	40mm PVC CL6	90	30
4.		50mm PVC CL6	90	30
5.	1	63mm PVC CL6	90	30
6.	1	75mm PVC CL5	90	40
7.	1	90mm PVC CL6	95	50
8.	2	110mm PVC CL3	96	50
9.	2	140mm PVC CL5	97	50
10.	2	160mm PVC CL3	98	60
11.	2	180mm PVC CL5	99	60
12.	2	200mm PVC CL3	102	60
13.	2	225mm PVC CL3	115	60
14.	3	250mm PVC CL3	103	60
15.	4	200mm DI K9 Pipe	100	60
16.	4	250mm DI K9 Pipe	103	60
17.	4	300mm DI K9 Pipe	115	60

In case of any decrease in size of trench proportionate deduction shall be made after working out cost for each work. To facilitate this contractor will furnish unit rate for each work he has included the rate for laying in the priced BOQ. In unavoidable circumstances the engineer may permit the contractor to lay pipeline in the same trenches provided a clear spacing of 15cm is maintained. In such cases deduction shall be made for the reduced quantity of earth work.

The BoQ for pipes for pumping main and gravity main in respect of DI is for running meter for supply and laying which includes all specials , rubber washers, bolts, nuts, flanges,

adapters and such other item required for the fulfilment of the project execution to the satisfaction of the employer. Before procurement and immediately after mobilization arrangement for the work, the Contractor will inspect the site, fix the alignment as per the direction of Engineer, prepare a list of all specials required for the concerned line duly furnished in the drawing and submit to the Engineer for approval. The Contractor will proceed with procurement only after such approval. The contractor will also submit the list of specials required for fixing of sluice valves , scour valves, NR valves etc after site inspection.

1.2 Wherever necessary, sand cushioning of minimum 15cm thickness from the bed shall be given as per IS Standards and as directed by the Engineer in charge. The pipe should be laid true to the alignment line and grade wherever necessary, appropriate bends should be used. The pipes laid must be jointed properly and carefully by using approved type of jointing materials.

1.3 After the pipes are laid and jointed, the pipelines are to be subjected to hydraulic pressure test as detailed in the relevant BIS Specification for various types as indicated below.

D.I. Pipes Clause of IS 12288/1987

In portion of pipeline, where the pipes have developed cracks or sweating, such pipes with jointing materials shall be removed and re-laid with new pipes at the contractor"s cost and the pipe line shall be re tested to the entire satisfaction of the Engineer in charge. No extra payment will be made on this account. The bidder has to make his own arrangements for the procurement of the required equipments for testing of pipes which shall be subjected to such test as the Engineer-in-charge deems fit to ensure the accuracy of the gauge.

1.4 Refilling shall be done with proper compaction with excavated earth. In no case the contractor shall be allowed to refill the trenches in hard excavated portion to be refilled by the boulders or excavated stuffs. This portion of trench shall be refilled by the soft strata from excavated stuff from distance place at no extra cost. The refilling shall be done in 15 cm thick layers duly watering and compacting each layer. The refilling may be done up to a height of 20 to 30 cm than the natural ground level to allow that sinking afterwards. If the refilling gets sunk below the natural ground level at anytime till the completion of the work, the contractor at his cost should make good the refilling to the required level as may be directed by the Engineer in charge. In case of sloping grounds contractor will provide cross bunds to prevent erosion of soil at his own cost.

1.5 In case of pipe trenches, the Engineer may reduce the width and depth of trench wherever a hard strata is met with, if he feels adequate and just sufficient to lay the pipe line and repair in order to reduce the hard rock quantity. In such case the contractor will be paid as per the actual measurement.

1.6 If the work is in a residential area, the contractor should carry out the excavation carefully to avoid collapse of any structure.

1.7 Valves shall be provided with valve pits with proper cover to bear the loads coming on it as per bid documents and departmental drawings and specification

1.8 Adequate protective measures should be taken against surge pressure. Thrust blocks and anchor blocks should be provided at all bends and appropriate places as per design.

1.9 Water required for testing the pipeline shall be arranged by the contractor at his cost.

1.10 The Contractor on receipt of work order shall have a MOU with the manufacturer agreeing to supply the pipes with guaranteed performance and also agreeing for inspection at the factory either through 3rd party or directly by the employer.

2. Laying of Cast Iron Pipes / D.I. Pipes

2.1 The laying and jointing of cast iron pipes shall be carried out as follows:

Before laying the pipes, the contractor shall carefully brush them to remove any soil, stones or other materials which may be therein. An even and regular bed having been prepared and joint pit excavated to form a recess under the socket of each pipe of no greater depth and width than to enable the pipe jointing to be property done. Each pipe shall then be carefully lowered and placed singly in the trench and shall rest in the solid ground. In places where the soil is not hard, cement concrete bed blocks or timber piles have to be provided under the pipes if directed by the Engineer in charge.

2.2 Pipes not Truly Laid

Any pipe or pipes laid, which on inspection are found to diverge from the true lines and levels shall be removed and re laid to the true lines and levels and the old jointing properly cleared off the pipes and fresh joints made by the contractor at his expense. Any pipes damaged in removal shall be replaced by the contractor at his cost.

2.2 Cutting

Where necessary and as ordered by the Engineer in charge, the Contractor shall cut the pipes and fix and joint common collars for jointing spigot ends. The cut ends of the pipe shall be made truly at right angles with the axis of the pipe.

2.3 Covering up Open Ends

The Contractor shall take particular care to ensure that the apertures and open ends of pipes are carefully covered whenever the workmen are not actually employed therein.

2.5 Jointing of DI Pipes

2.5.1. With Spigot and Socket Pipes

It is recommended that above ground installation of spigot and socket pipes be provided with one support per pipe, the supports being positioned behind the socket of each pipe. This results in a normal distance between supports of 4m.

Pipes should be fixed to the supports with mild steel straps so that axial movement due to expansion or contraction resulting from temperature fluctuation is taken up at individual joints in the pipe-line. In addition, joints should be assembled with the spigot end withdrawn 5 to 10mm from the bottom of the socket to accommodate these thermal movements. Pipes supported in this way are capable of free deflection and axial movement at the joints which accommodate small movements of the pipe supports.

The designed anchorage shall be provided to resist the thrusts developed by internal pressure at bends, tees etc,

Where a pipe-line crosses a watercourse, the pipes are to be laid without blocking the went way constructions. Early consultation with river authorities will assist in evaluating the effect of river characteristics (for example, nature of bed, scour levels, maximum velocities, high flood levels, seasonal variations, etc) on design and construction. If necessary, unsupported spans between 4 and 6m may be obtained by positioning the pipe supports relative to the pipe joints.

2.5.2 Flanged Pipes

The recommended maximum unsupported span is 8m. The supports shall be located at the centre of every second pipe. The supports of all flanged pipe work spans should be stable and unyielding due to movements in the pipe line. The straps should prevent any lateral movement or lifting of the pipe-lines but not restrict expansions and constrictions caused by temperature fluctuations.

2.6 Cutting of Pipes

The cutting of pipe for inserting valves, fittings, etc shall be done in a neat and workman like manner without damage to the pipe or lining so as to leave a smooth end at right angles to the axis of the pipe.

2.6.1 By Hacksaw

Hand or power operated hacksaw should be used with blades having teeth at a pitch of 1mm.

2.6.2 By Manually Operated Wheel Cutter

The type of cutting wheel used for cast iron pipes is not suitable for ductile iron pipe. Special wheel, as used for cutting steel pipes, shall be used and cut ends are trimmed with a file.

2.6.3 By Pipe-Cutting Machine

Machines with cutter heads or abrasive wheels shall be used. Cutter head should have a front rake angle of 70 as used for steel pipes.

2.7 End Preparation of Cut Pipes for Jointing

The burr left after cutting should be trimmed off by light grinding or by filing.

2.8 Wrapping

When ductile iron pipes are to be laid in aggressive soils, the pipes should be wrapped externally with protective coatings, such as bitumen or coal tar sheathing protective tapes or by loose polyethylene sleeving, or in certain circumstances, concrete before laying. At joints, bends and valves, precautions should be taken to provide sufficient overlap of the wrapping sleeve so that no pipe-line is exposed to the aggressive soil.

2.9 Pipe-line Anchorage

All pipes-lines having unanchored flexible joints require anchorage at changes of direction and at dead ends to resist the static thrust developed by internal pressure. Dynamic thrusts caused by flowing water act in the same direction as static thrusts. This thrust is of sufficient magnitude at high velocities to warrant safety consideration. Where possible, concrete anchor blocks should be of such a shape as to allow sufficient space for the remaking of the joints.

2.10 Joints and Jointing of Ductile Iron Pipes

Two main types of joints are used with ductile iron pipes and fittings:

a) Socket and spigot flexible joints:
   1) Push on joints; and
   2) Mechanical joints.
b) Rigid flanged joint

2.10.1 Flexible joint

The spigot and socket flexible joint should be designed to permit angular deflection in direction and axial movement to compensate for ground movement and thermal expansion and contraction. They in corporate gasket of electrometric materials and the joints may be of at the simple push-on-type or the type where the steal is effected by the compression of a rubber gasket between a seating on the inside of the socket and the external surface of spigot. Joints of the latter type are referred to as mechanical joints. Both push-in-and mechanical joints are flexible joints. Flexible joints require to be externally anchored at all changes in direction such as at bends, etc, and at blank end to resist the thrust created by internal pressure and to prevent the withdrawal of spigots.

2.10.2 Flanged joint

Flanged joints are made on pipes having a machined flange at each end of the pipe. The seal is usually effected by means of a flat rubber gasket compressed between two flanges by means of bolts which also serve to connect the pipe rigidly. Gaskets of other materials, both metallic and non-metallic, are used for special applications.

2.10.3 Jointing procedure

Procedure for jointing will vary according to the type of joint being used. Basic requirements for all types are:

a) Cleanliness of all parts,
b) Correct location of components,
c) Centralization of spigot within socket, and
d) Strict compliance with manufactures jointing instructions.

The inside of sockets and the outside of spigots should be cleaned and wire brushed for a distance of 150 to 225 mm. Glands and gaskets should be wiped clean and inspected for damage. When lifting gear is used to place the pipe in the trench, it should also be used to assist in centralizing the spigot in the socket.

Where the pipeline is likely to be subjected to movement due to subsidence variations, the use to flexible joints is recommended. A gap should be left between the end of the spigot and the back of the socket to accommodate such movement.

2.11 Jointing of C.I. Pipes

The trench must be kept quite dry during jointing unless in any particular case the Engineer permits laying of the pipe in wet conditions. Plain spigot and socket pipes shall be joined as follows.

a) LEAD JOINTS

Generally lead joints shall be used for all sizes. Provision of lead joints shall also be made at street crossings, at closing joints and for all specials and as determined by the Engineer depending upon the site condition.

The spigot of the pipe must be forced well home into its socket and must be centered, so that the joint may be of even thickness all rounding. As many laps of white hemp spun yarn as may be needed to leave the space required for the lead shall be driven to the bottom of the socket without being forced through the joint into the pipe but carefully driven home with a caulking tool. The proper depth of each joint shall be tested before running the lead by passing completely round it a wooden gauge, notched out to the correct depth of lead, the notch being held close against the face of the socket. The joints shall then be run with molten lead insufficient quantity so that after being caulked solid, the lead may project 3 mm beyond the face of the socket against the outside of the spigot but must be flush with outside edge of the socket.

For pouring lead in the joints, a ring of hemp rope covered with clay shall be wrapped around the pipe at the end of the socket leaving an opening at the top of the socket into which the lead can be poured. The hemp rope shall be supported by clay packing so as to withstand the operation of lead pouring.

The lead used shall be carefully skimmed of all scale, when melted in a cast iron pot or patent melting machine. Sufficient lead shall then be taken by a ladle and run hot into the joint, and the joint filled at one running. The joint shall then be caulked when cool by a suitable caulking tool and a 2 kg hammer and the joint left neat and smooth.

The weight of lead and hemp which shall be used in each joint shall be in conformity with the table given below or as specified by the Engineer.

<u>Quantity of lead and spun yarn for different sizes of pipes</u>

Nominal size of pipe (in mm)	Lead / Joint (in Kg.)	Depth of Lead joint (in mm)	Spun yarn per joint (in Kg.)
80	1.8	45	0.10
100	2.2	45	0.18
125	2.6	45	0.20

150	3.4	50	0.20		
200	5.0	50	0.30		
250	6.1	50	0.35		
300	7.2	55	0.48		
350	8.4	55	0.60		
400	9.5	55	0.75		
450	14.0	55	0.95		
500	15.0	60	1.00		
600	19.0	60	1.20		
700	22.0	60	1.35		
750	25.0	60	1.45		
800	31.5	65	1.53		
900	35.0	65	1.88		
1000	41.0	65	2.05		
1100	46.0	65	2.40		
1200	50.0	70	2.60		
1500	66.5	75	2.80		
8 Inches		4.54	2.00	Inches	0.29
9 "	5.10	2.00 "	0.31		
10"	5.67	2.00 "	0.34		
12 "	6.58	2.00 "	0.48		
14 "	9.30	2.50 "	0.63		
15 "	9.98	2.50 "	0.68		
16 "	10.66	2.50 "	0.74		
18 "	14.06	2.50 "	0.95		
20 "	16.33	2.50 "	1.04		
21"	17.92	2.50 "	1.08		
24 "	20.41	2.50 "	1.21		
27 "	23.13	2.50 "	1.33		
30 "	25.86	2.50 "	1.46		
33 "	28.35	2.50 "	1.65		
36 "	31.58	2.50 "	2.40		

Note: The quantities of lead and spun yarn given in the table are provisions and variation of 20 percent is permissible.

b) Flanged Joints

Flanged joint should be made by painting the facing of the flange with white lead freely and bolting up evenly on all sides. A thin fiber of lead wool may be very useful in making the joints water tight where facing of the pipes is not true.

When packing must be used, it should be of rubber insertion of approved thickness. The packing should be of the full diameter of the flange with proper pipe hole and bolt holes cut out evenly on both the inner and outer edges. Where the flange is not fully faced, the packing may be of the diameter of the packing strip only. Proper placing of the packing should be checked before another pipe is joined on.

c) Rubber Ring Joints

In the case of rubber ring joints or push on joints, the groove and the socket shall be thoroughly cleaned before inserting the rubber gasket. While inserting the gasket it shall be made sure that it faces the proper direction and that it is correctly seated in the groove. After cleaning dirt or foreign materials from the plain end, lubricant shall be applied in accordance with the pipe manufacturer"s recommendations.

The Contractor shall make sure that the plain end is beveled as square as sharp edges may damage or dislodge the gasket and cause a leak. When the pipe is cut at site, the plain end shall be beveled with a heavy file or grinder to remove all sharp edges. The plain end of the pipe shall be pushed into the socket of the pipe and while pushing, the pipe shall be kept straight. If any deflections are to be made in the alignment, it may be made after the joint is assembled.

A timber header shall be used between the pipe and crow bar or jack to avoid damage to the pipe while the plain end of the pipe is pushed into the socket either with a crow bar or jack, or lever puller.

2.12 Fixing Sluice Valve

The sluice valves to be fixed on the pipelines shall be examined, cleaned and placed in the positions as shown in the drawings. The valves shall be placed on the pipeline and valve chambers constructed according to drawings. The depth at which the valve is to be laid and the dimensions of concrete and masonry shall be varied when necessary under the orders of the Engineer.

As the pipes in some instances may be required to be fixed at a less depth than will permit the top of the valve spindle being below the level of the road (but this may only be in cases where the position of the valve is to one side of the metalloid road) the walls of the valve chamber shall in such cases be carried up to such height at may be ordered, and the chamber shall have such covering as the Engineer may direct.

The valve shall be supported in the valve chamber so that no stress or strain occurs in the flange or other joints of the valve.

The valve shall be carefully protected from slime or dust by a suitable mat or gunny covering and the pit itself shall be cleared of all unwanted material.

2.13 Fixing Scour Valve

Scour valves shall be fixed at places shown in the drawings or as directed by the Engineer, and the scour connections from the main shall be carried out completely as per drawings.

2.14 Fixing Air Valve

Air valves shall be fixed at the summits of pipe lines or at places as may be directed by the Engineer. The air valve connections etc., shall be carried out as per drawing.

2.15 Works to be left Water tight

The Contractor shall construct the valve chambers and all other Works so that they shall be water tight. Should any leakage appear, it shall be made good by him at his expense by removing and reconstructing the portions of the Work so affected or by other method which will render the Work thoroughly water tight to the satisfaction of the Engineer.

2.16 Cleaning of Mains

During the execution of the work the contractor shall keep the interior surface of the mains free from cement, brick, soil or other superfluous matter and shall hand over the mains perfectly clean and free from deposit on completion.

2.17 Masonry chambers

Chambers for sluice valves, inspection, scour valves, air valves shall be constructed on the pipes in the positions as shown in the drawings or in such positions as the Engineer may direct. The work shall be done strictly in accordance with the detailed drawings or as ordered by the Engineer. The excavation shall not be made lower than necessary to admit of the earth being properly tampered. The bottom of the excavation shall be properly leveled, rammed and a bed of concrete laid thereon. When the concrete has sufficiently set the building brick walls shall then be proceeded with and all iron work fixed in as the work proceeds. The inside of all chambers shall be plastered with cement mortar 15 mm thick and the outside with cement mortar 12mm thick. The chamber shall be topped with pre-cast R.C.C. Slab 1:2:4 or cast iron surface box as ordered by the Engineer. The surface box or valve cover shall be fixed on the top of the R.C.C. slab by a layer of; cement mortar and sides of the surface box or valve cover covered over with cement concrete.

Where pipes pass through walls of chambers relieving arches shall be turned neatly over the upper half of the pipes or R.C.C. lintels shall be provided to avoid load of the walls transmitted to the pipes. Cast Iron steps shall be built in each chamber as the Work proceeds on being inserted to every 4 courses of brick work, horizontal distance center to center of each row being 30 cms.

The Contractor shall include in his rate for brick work cost for fixing steps, frame, cover etc., for completing all chambers in accordance with the drawings and with the above specifications.

2.18 Testing of Mains-hydrostatic Test

After laying and jointing the pipes and specials, the pipe lines shall be tested for hydrostatic pressure in such length 100 to 150m as specified by the Engineer.

The test pressure shall be equal to 100% or such other higher percent as may be specified in excess of the pressure the pipe will have to withstand subsequently subject to a minimum test pressure of 1.5 times the working pressure.

The contractor shall make his own arrangements to procure, necessary equipments, apparatus etc., required for testing and shall provide necessary labour for filling with water the

length of pipes to be tested, fixing all apparatus and for carrying on the testing operations until the length of pipes specials and connections are finally passed by the Engineer.

The length to be tested shall be provided with two blank flanges fastened on in the usual manner by collar bands and bolts to the end pipes or if the length to be tested shall have a sluice value at each end, such blank flanges may be dispensed with.

The length of pipes to be tested shall first be filled in with water from a higher section of pipes already laid or with clean water shall be arranged at the contractor"s expense with the approval of the Engineer.

Before the actual testing pressure is applied any air which has lodged in the length of pipes to be tested shall be got rid of, by screwing on at the highest part of the length of pipes or temporary air valve, or, by opening a temporary stop-cock or by other mean as the Engineer may direct.

The test pressure shall then be applied to the length of pipes under test by a hand or powered hydraulic test pump. The connection of the test pump to the length of pipes shall either be at the union connection provided at a blank flange or shall be at a temporary stop cock or fountain connections as the Engineer may in the circumstances direct.

The actual test shall be made by pumping water into the length of pipes under test, until the test pressure as specified above has been reached on the pressure gauge.

The pipe shall be judged to have passed the test satisfactory if the quantity of water required restoring the test pressure of 30m for 24 hours does not exceed 15litres /10mm of nominal bore for a length of 1 km.

When a flange joint is found to be leaking, care shall be taken that while tightening up the flanges, the neighbouring joints are not affected.

If the length of pipe line under test is found to be satisfactory and no leaks or sweatiness are found at the pipe joints or at the joints of specials and connections then this length of pipe line will be passed by the Engineer.

But should any pipe, joint, special or connection be found to sweat or leak, the contractor shall make good at his cost such defective joint and the length of pipe line shall be re tested by the Engineer until all pipes, joints, specials and connection are found to be satisfactory.

If any pipe or special leaks or bursts, the damaged portion shall be removed and new pipes or specials shall be laid and jointed at the contractor's cost.

2.19 Restoring Road Surface

The surface of the road or ground shall be finished off to the proper level with the same kind of materials the surface consisted of before the excavation commenced or by cement concrete, except in the case of superior roads and tarred roads in which case the restoration shall be done by the PWD for which restoration charges will be remitted by SLEC. Should any settlement occur after refilling is completed, and up to the end of the period of maintenance, it

shall be made good at once and the surface restored to the satisfaction of the authority under whose jurisdiction such road or ground may be, all at the cost of the contractor.

2.20 Collection of Rubbish

The Contractor shall, at his cost, on the completion of the Work remove all water and all materials or rubbish of every description which may have been collected in the works find a deposit thereof and anything which may have collected within the works, during the period of maintenance shall also be removed before the Works are finally accepted by the Employer.

3 Disinfections of Mains.

Upon completion of a newly laid main or when repairs to an existing pipe are made, the main shall be disinfected as directed by the Engineer. The mains shall be flushed prior to disinfection except when the tablet method is used.

After initial flushing, the hypo chloride solution shall be applied to the water main with mechanically or electrically powered chemical feed pump designed for feeding chlorine solutions. For small applications, the solution may be fed with a hand pump.

In the case of mains of a large diameter, water from the existing distribution system or other approved source of supply shall be made to flow at a constant measured rate into the newly laid pipe line. The water shall receive a dose of chlorine also fed at a constant measured rate. The two rates shall be proportioned so that the concentration in the water entering the pipeline is maintained at not less than 300 mg/I. The chlorine shall be applied continuously and for a sufficient period to develop a solid column of „Slug" of chlorinated water that will as it passes along the line expose all interior surfaces to a concentration of at least 300 mg/I. for at least 3 hours. As the chlorinated water flows past tees and crosses, related valves and hydrants shall be operated so as to disinfect the appurtenances.

After the applicable retention period, the heavily chlorinated water shall be flushed from the main until the chlorine concentration in the water leaving the mains is not higher than the generally prevailing in the system or less than I mg/I. After final flushing and before the water main is placed in service, a sample or samples shall be collected from the end of the line and tested for bacteriological quality and shall show the absence of coli form organisms. If the initial disinfection fails to produce satisfactory samples, disinfection shall be repeated until satisfactory samples have been obtained. When the samples are satisfactory, the main shall be placed in service.

4 Earth work Excavation (LINEAR MEASUREMENT)

The Bidder should carefully inspect the site to assess the prevalence of different soil classifications and quote the rate for trench excavation for laying pipe line taking into account all soil classifications that are likely to be encountered and no extra rate will be paid for excavation of trench on account of any variation in the classification of soil met with during actual execution. In case of reduced depth or width proportionate deduction shall be effected as per unit rate quoted.

V(8) DEFECT LIABILITY PERIOD

The defect Liability Period will be 12 months from the date of full satisfactory commissioning of the scheme. The contractor shall carry out all repair works connected with the equipments of the water supply scheme executed by him during the above period.

V (9) REFERENCE TO SPECIFICATIONS/CODE OF PRACTICE

Ordinary Portland Cement (33 Grade) 269-1976

43 Grade Ordinary Portland cement 8112-1989
Pozzolona Portland cement 1489-1991
Hydrophobic Portland cement 8043-1978
Rapid Hardening portland cement 8041-1990
Low Heat Portland Cement 12600-1989
Standard sand for testing of cement 650-1966
Methods of Test for Pozzolonic Materials 1727-1967
Methods of sampling and test for water & waste water (Physical & chemical) 3025-1984
(Part 1 to 37)
Methods of sampling hydraulic Cement 3535-1986
Methods of Physical tests for hydraulic Cement 4031-1988
(1 to 14)
Methods of Chemical analysis of hydraulic cement 4032-1985
Aggregates coarse & Fine from Natural resources 383-1970

For concrete. 4082/1977

Sand for Masonry Mortar 2116-1965 1542/1977
2386-1963 (Part 1 to 8)
Methods of tests for aggregates for concrete
Part 1-Particle size and shape 2386-1963
(Part-1)
Part II-Estimation of deleterious Materials &
Organic impurities 2386-1963
(Part III)
Soundness 2386-1963 (Part-III)
Methods for sampling of aggregates for concrete 2430-1986
Specifications for test sieves Wire cloth test Sieves 460-1978 (Part – I)
Common Burnt clay building bricks 1077-1976
Mild Steel and Medium tensile steel bars and hard
Drawn steel wire, concrete reinforcement,
Part-I-Mild Steel & Medium tensile steel Bars
Part-II-Hard drawn steel wire 432-1982
High Strength deformed steel bars and wires for

Concrete reinforcement 1786-1985
High Tensile Steel for PSC Pipes 1784-1986 (Part-I)
Bending and flexing of bars for concrete
reinforcement 2502 – 1969
Recommendations for detailing of reinforcement
in reinforced concrete works 5525-1969
Method for tensile testing of steel wire 1521-1972
Method of test for determining modulus of elasticity2854-1964
Glossary of terms relating to cement concrete 6461-1972
(Part 1 to 12)
Methods of test for strength of concrete 516-1959
Methods of testing bond in reinforced concrete
Pull out test 2770-1967
Methods of test for permeability of cement
Mortar and concrete 3085-1965
Methods of test for splitting tensile strength
Of concrete cylinders 5816-1970
Code of practice for construction of 2911 (Part I)
Pile foundations (concrete piles)
Sec-1-1979
Driven cast-in-situ concrete piles Sec-2-1979
Bored cast –in-situ piles Sec-3-1979
Driven pre-cast concrete piles
Bored pre-cast concrete piles Sec-4-1984
Code of practice for construction of raft foundation 2950-1981
Design Aids for reinforced concrete SP 16-1980
Explanatory Hand Book on Codes for earth w Engineering SP 22-1982
Explanatory Hand Book on IS Code 456-19 SP24-1983
Hand Book on causes and prevention of cracks
in buildings SP 25-1984
Hand Book on concrete reinforcement & detailing SP 34-1987
Brick Masonry 2212-1962
Construction of Stone Masonry 1957-1967
Asbestos cement pressure pipes 1592-1989
Concrete pipes with and without reinforcement 458-1988
P.S.C Pipes (including fittings) 784-1978

Methods of tests for concrete pipes

458-1988
3597-1985

Materials for M.S. Specials
Specifications for M.S.Specials for P.S.C.Pipes. 22-1976 & 2062-1980
Specifications for Steel cylinders reinforced Concrete pipes. 1916-1989
Methods of tests of concrete pipes 3597-1985
Specials for steel cylinders reinforced concrete pipes 3597-1985
Cast iron specials for asbestos cement pressure Pipes for water, gas & sewage 5531-1988
Methods of test for asbestos cement products 5913-1989
Centrifugally Cast (Spun) Iron pressure pipes for Water, gas and sewage including fittings. 1536-1989

Specifications for Centrifugally Cast (Spun)D.I. Pipes for Water, Gas and Sewage. 8329-1990

D.I. Fittings for pipes for water, gas & sewerage 9523-1980
Dimensional requirements of rubber gaskets for Mechanical joints and push on joints for the use With C.I.D.I. Pipes. 12820-1986

C.I. Specials for Mechanical and push on flexible joints for pressure pipe lines for water, gas &sewage 13382-1992
Horizontally cast iron double flanged pipes for water. Gas and sewage 7181-1986
Cast iron fittings for pressure pipes for water, gas and sewage 1538-1976 (Part 1 to 24)
Cast iron detachable joints for use with Asbestos Cement pressure pipes 8794-1988
Rubber rings for jointing C.I. Pipes, R.C.C. Pipes & AC Pipes. 5382-1969

Rubber rings for jointing P.S.C. Pipes 5382-1985
Rubber rings for jointing AC Pipes with AC couplings 10292-1985

Pig Lead (caulking lead) 782-1978
Hemp yarn 6587-1966
Rubber Insertion to be used in jointing CIDF pipes 638-1979
Bolts & Nuts to be used in jointing CIDF Pipes 1363-1967
Unplasticized PVC Pipes for potable water supplies 4985-1988
Injection moulded PVC socket fittings with Solvent cement joints for water supplies. 7834-1987 (Part 1 to 8)
Fabricated PVC fittings for potable water supplies 10124-1988 (Part 1 to 13)
Methods of test for unplasticized PVC pipes for potable water supplies 12235-1986 (Part 1 to 11)
Sluice valves for water works purposes (50 to 300 mm Dia size) 780-1984

Sluice valves for water works purposes
(300 to 1200 ; mm Dia size) 2906-1984
Water meter (15 mm) 2401-1973
Surface boxes for sluice valves 3950-1979
Manhole covers for sluice valves 1726-1974
Laying of Asbestos Cement Pressures Pipes 6530-1972
Laying of Concrete pipes 783-1985
Laying of Cast-Iron Pipes 3114-1985
Laying of PSC Pipes 126 of APSS & 783-1985
Laying of DI Pipes 12288-1987
Laying and jointing of unplasticized PVC Pipes 7634-1975
(Part 3)
Batch type concrete mixer 1791-1968

Sheep foot roller 4616-1968
Safety code for excavation works 3764-1966
Safety code for scaffolds and ladders
Part-I Scaffolds 3696-1966 (Part I)
Part II-Ladders 3696-1966 (Part-II)
Safety code for piling and other deep foundations 5121-1969
Safety code for working with construction machinery 7293-1974
Tamil Nadu Building Practice Volume-I Volume-II
Government of India Manual on Water Supply and Treatment
Latest (Revised)
Gravel for packing 4091-1967
Hard drawn Steel Wire 1785-1983
(Part I and II)
Structural Steel 226-1975
Hard rolled mils steel for concrete 1139-1966
Hard drawn Steel Wire 1566-1982
American Society for Testing of Materials 1566-1982
British Standard 2494-1955 Part I
Welding Electrodes 814-1970
Steel Sheets 225-1975
Guinitting 7322-1994
Welded Joints 3589-1966and 2041-1962
Tensile Test 223-1950
Mechanical and Electrical Works
Turbine Pump 1710-1972
Submersible Pump 8030-1976
Submersible Motor 9283-1979
Earthing 3043-1966
Transformer 1180-1964
Generator 22 53-4722

SECTION – V

KRWSA
JALANIDHI

Tender No 089/RC/2017/KRWSA

G.W.D.
FORM No. 83

NOTICE INVITING TENDERS FOR WORKS

Name of Work – Constructing Open Wells and supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths) in Palakkad district, Phase - III activities. The programme is implemented with the financial support of Social Justice Department, Govt. of Kerala.

Locality – Agali and Pudur Grama Panchayaths in Palakkad district.

Last date of tender on 20.12.2017

KRWSA
NOTICE INVITING TENDER FOR WORK
FORM No. 83

1. Executive Director ,KRWSA PMU, Thiruvananthapuram, Invites Competitive electronic Tenders for Constructing Open Wells, Supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths) in Palakkad district Phase – III activities, from Contractors having valid and eligible A/B/C contract registration with Government of Kerala PWD/KWA/CPWD/Grama Panchayaths or other State Governments/Government of India

   The items and sub-heads of works to be done are enumerated in the subjoined Schedule. Unless otherwise specified, the tender must be for the whole or any individual work and part tenders are liable to rejection. A contractor may tender for more than one work with the earnest money deposit specified in each case, but shall not tender for any part of a work only, unless specifically so required.

2. All works shall be done in conformity with the specifications and conditions of contract in force in the KRWSA in case of schedule rate contract tenderers must quote their own rates specifically for each item without reference to the departmental estimates or the current schedule of rates and for percentage rate contract only a single rate as an overall percentage above or below or at the rates given in the schedule by a single entry at the bottom of the schedule under the head quoted rate may be made. The rates quoted shall be inclusive ones covering all the operations contemplated in the specifications and tender schedules and all incidental work necessary for such operations such as shoring, bailing out water, scaffolding etc.

3.*"The rates quoted shall be inclusive of all taxes'.*

   (a) Deleted
   (b) Deleted

4. Tender sealed and endorsed as such with the name of the work clearly written thereon should be delivered at the office of the. Executive Director, KRWSA, PTC – Towers, 3rd Floor, SS Kovil Road, Thampanoor, Thiruvanathapuram -1, on 20.12.2017 before 11.30 am. They will be opened at the office of delivery on 22.12.2017 at 12.30 p.m. by Executive Director or such officer as may be authorized in this behalf in the presence of such of those tenderers or their authorized agents as may be present. In case it is not possible to open the tenders on the specified date due to any valid reason the tenders shall open in the next working day at 4.00 p.m

   The total amount of each tender will be read out, the tender and all corrections in the tender will be attested by the opening officer with dates and initials and by the tenderer, if present, a list of corrections which remain unattested by the tenderer will be read out and passed to each tender. Details of individual rate will be treated as confidential and will not read out. Each tender should accompanied by a receipt for an Earnest Money Deposit of Rs 22,000/-. Tenders not accompanied by EMD will not be considered.

   (a) Deleted
   (b) Deleted
   (c) Deleted

5. Selected contractor will be required to produce Income Tax and Sales Tax clearance certificates before final payment is made for the work, and before security deposits released.

6. The contractor submitting tender should produce copies of solvency certificates clearly indicating to what extent they are solvent, from the Tahsildar of the Taluk where they reside along with their tenders.

7. Each tenderer must also send a certificate of Income Tax verification from the appropriate Income Tax authority in the form prescribed therefore.

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

   If a certificate had already been produced by the tenderer during the calendar year in which the tenderer is made in respect of a previous tender it will be sufficient if particulars regarding the previous occasion on which the certificates was produced are given.

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

8. The tenderer shall examine closely the Madras Detailed Standard Specifications, and also the standard preliminary specifications contained therein and sign the division office copy of the Madras Detailed Standard Specifications and its addenda volume in token of such study before submitting his tender unit rates which shall before finished work in site. He shall also carefully study the drawing and additional specifications and all the documents which form part of the agreement to be entered into by the accepted tenderer. The Madras Detailed Standard Specifications and other documents connected with the contract such as specifications, plans, descriptive specification sheet regarding materials etc. can be seen at any time during office hours on office days in the office of the Executive Director, PMU, KRWSA, Thiruvananthapuram.

9. The tender‟s attention is directed to the requirement for materials under the clause „Materials and Workmanship‟ in the „Preliminary Specification‟. Materials conform to the Indian Standard Specification shall be used on the work, and the tenderer shall quote his rate accordingly.

10. Every tenderer is expected, before quoting his rate, to inspect the site of the proposed work. He should also inspect the quarries and satisfy himself about the quality and availability of materials. The names of quarries, kilns etc. where from certain materials are to be obtained will be given in the descriptive specification sheet. The best class of materials to be obtained from quarries or other sources defined shall be used on the work. In every case the material must comply with the relevant standard specification. Samples of materials, as call for in the standard specification or in this tender notice, or as required by the Executive Director in any case, shall be submitted for the Executive Director approval before the supply to site of work is begun. If the contractor after examination of the source of materials defined in the descriptive specification sheet, is of opinion that materials complying with the standard or other specifications of the contract cannot be obtained in the descriptive specification sheet he shall so state clearly in his tender and state where from he intends to obtain the materials subject to the approval of the Executive Director. The KRWSA will not, however, after acceptance of contract rate pay any extra charges for lead or for any other reasons, in case the contractor is found later on to have misjudged the materials available. Attention of the contractor is directed to the standard "Preliminary Specification" regarding the payment of seignior age, tolls etc.

Note: The KRWSA does not undertake to construct or make available any approach road or other means of approach to the proposed work site and the tenderer shall get acquainted with the available means of approaches to the proposed site and quote for the various items. The authority shall not be liable for any claim raised later, on the plea of non- availability or non access to the site.

11. The tender"s particular attention is drawn to the sections and clauses in the standard "Preliminary Specification" dealing with:-

(1) Test, Inspection and rejection of defective materials and work.

(2) Carriage.

(3) Construction Plant.

(4) Water and Lighting.

(5) Cleaning up during progress and for delivery.

(6) Accidents.

(7) Delays.

(8) Particulars of Payment.

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

12. In consideration of the tenderer being allowed to quote for the work, he should keep the tender firm for a period of 90 Days from the date of opening the tender during which period or till the tenders are decided whichever is earlier; he will not be free to withdraw the tender. Any such withdrawal will entail forfeiture of the earnest money deposited for the work.

Due to KRWSA or administrative reason it is found necessary to keep the tender open for a further period, prior consent of the tenderer shall be obtained in writing for every further period of the month.

13. Before commencing work or within a week after the date when the acceptance of the tender has been intimated to him the tenderer shall deposit a sum sufficient to mask up the balance of 5 percent of the probable value of contract which together the amount of earnest money deposited shall be treated as security for the fulfilment of the same and shall execute an agreement for the work in the P.W. Schedule Form. If he fails to do this or in the case of P.W. contracts maintain a specified rate of progress (to be specified in each case in the tender schedule) the Earnest Money and security deposit shall be forfeited to KRWSA. and fresh tenders shall be called for or the matter otherwise disclosed off it as a result of the tenderer to pay the requisite deposit, sign contracts or take possession of the work, any loss to KRWSA the original contractor shall have no claims whatever to the difference. Recoveries on this or any other account will be made from the sum that may be due to the contractors or under the Revenue Recovery Act or otherwise as KRWSA may decide.

Note:

1. The Security Deposit by the selected tender will be 5 percent of the contract value (agreed PAC) and the deposit will be retained till the expiry of defect lability period. At least 50%of this deposit shall be collected in the form of treasury fixed deposit and the rest in the form of bank guarantee.
2. Investment in Treasury Saving Bank/Nationalized bank will alone be treated as acceptable form of security.

14. The acceptance of the tender rests with the Executive Director who does not undertake to accept the lowest or any particular tender.

15. The right to carry out the work in conformity with or in a manner entirely different from the terms of this invitation that may be considered most suitable before or subsequent to the receipt of tenders due of exigencies of work is reserved with the department.

16. Drawings, schedule of quantities, specifications of work to be done and conditions of contract to be entered into can be seen at the office of the undersigned. It shall be definitely understood that the KRWSA does not accept any responsibility for the correctness or completeness of the schedule that the schedule is liable to alteration by omission, deductions or addition in the discretions, of the departmental officer or as set forth in the conditions of contract. The tenderer will, however, base this tender amount in the case of lump sum tender on the basis of those quantities etc.

17. Deleted

18. The Earnest Money Deposit of the unsuccessful tenderers will be refunded immediately after tabulating tenders, keeping only the earnest money of the first 3 lowest tenderers.

    The Earnest Money Deposit of the remaining unsuccessful tenderers will also be refunded within a week from the date of execution of agreement for the works.

19. Solicitors fee, if any to be paid to the Law Officer of KRWSA for scrutinizing or drawing up of agreements will be paid and the same recovered from the successful tenderers.

20. Tenderers must also state in their tenders if they are prepared to carry out at their tendered rates such portion or portions of the work as may finally be allotted to them by the Officer deciding tenders.

Note :The department reserves the right to allot such portions of the work included in the tender at the rates quoted by the tenderer in the absence of specification noting by the tenderer to the contrary against clauses 4 on page 5 of tender (G.W.D. Form 84).

Such allotment shall not vitiate the acceptance and the tender shall indemnify KRWSA due to failure on the part of the tenderer to carry of such portion of the work allotted to him at the rates quoted by him.

20. (a) The successful tenderer will have to carry out 25 percent more of the estimated quantity of every item at his agreed rates.

21. Any further information necessary can be obtained at the office of the undersigned on all working days during office hours.

22. The works should be completed in all respects in 3 months from the date of issue of selection notice.

23. Payment by final measurement at unit prices.

a) Final measurements need not be taken unless either the contractor or the Executive Director claims extras to or deductions from the quantities of Schedule A.

b) In case final measurements are claimed they shall be taken only for those items for which either the contractor or the Executive Director claims final measurements and the quantities of the remaining items in Schedule A shall be accepted as correct. The lump sum amount mentioned in the agreement will then be varied by addition there to or

deducting there from as the case may be the difference (if any), between the amounts mentioned in Schedule A for such items and the amounts arrived at by calculation as contract rates based on the revised quantities for the same, obtained by final measurement as aforesaid.

c) It shall be accepted as a condition of the contract that the payment of the final bill to the contractor less with held amount and his acceptance thereof shall constitute a full and absolute release of KRWSA from all further claims by the contractor under the contract.

d) Payment for addition and deductions or omissions.

No authorized variation shall vitiate the contract but additions and omissions shall be measured and dealt with in accordance with Clause 23 (b).

e) Items of work not expressly or impliedly described in the schedule, plans or specifications will be treated as „extras". They will include only items of work which though highly necessary for the proper execution of the work and for its completion were not provided for in the original contract.

1) The execution of an extra item of work and payment therefore will be based on the following conditions:-

i) There shall be an order in writing to execute the extra item of work duly signed by an Engineer not below the rank of a Project Engineer before its commencement.

ii) If the contractor finds, after examining in the specifications and plans that extras are involved he should give notice to the Engineer to this effect and shall proceed with the execution of the extra item, only after receiving instruction in writing from the Engineer.

2) Extra items may be classified as additional, substituted or altered items, depending on their relation or otherwise to the original of work.

3) The rates for extra items shall be worked out as below:

i) In the case of all extra items whether additional altered or submitted if accepted rates for identical items provided for in the contract such rates shall be applicable.

ii) In the case of extra items whether altered or substituted for which similar items exists in the contract the rates shall be derived from the original item by appropriate adjustment of cost of affected components. The percentage excess or deduction of the contract rate for the original items with reference to the departmental estimated rate shall be applied in deriving the rates for such items.

iii) In the case of extra items, whether altered or substituted and for which similar items do not exist in the contract and rates exist in the schedule of rates, the rate shall be arrived at on the basis of the departmental data rates current at the time of ordering the extra items after applying the tender deductions except on the cost of departmental materials, tender excess, if any, will not be applied.

iv) In the case of additional items, the rates shall be arrived at on the basis of the departmental data rates current at the time of ordering the extra item of the date of commencement of the extra item, whichever is earlier, after applying the tender deduction except in the cost of departmental materials tender excess if any, will not be applied.

v) In the case of extra items, whether additional, altered or substituted, for which the rates cannot be derived from similar items in the contract and only partly from the departmental schedule of rates, the rates for such part or parts of items as are not covered in the schedule of rates shall be determined by the Engineer on the basis of the prevailing market rate giving due consideration to the analysis of the rate furnished by the contractor

with supporting documents, including contractors profit. This shall be added on the departmental rate (including contractor"s profit) current at the time of ordering or executing the extra item, whichever is earlier, for the other part of the item, for which rates can be derived from the scheduled of rates.

vi) In the case of extra item whether additional, altered or substituted, for which the rates cannot be derived either from similar items of work in the contractor from the departmental schedule of rates the contractor shall within 14 days of the receipt of the order to carry out the said extra item of work communicate to the Engineer the rate which he proposes to claim for the item supported by analysis of the rate claimed and the department shall within one month thereafter, determine the rate on the basis of the market rate giving due consideration to the rate claimed by the contractor.

vii) In case of percentage rate contract, the rate for extra item shall be arrived at by applying the percentage excess or deduction to the departmental data rate as per the original schedule on which the tenders were invited.

4. Wherever the term "Departmental data rate" appears, it shall mean the rate derived form the Departmental Schedule of rates and shall include conveyance charges and contractor"s profit.

(f) In cases in which the contractor has executed extra items not contemplated in the agreement but the rates of which require sanction of higher authorities the Director (Technical) may in such cases, sanction advance up to an amount not exceeding 75 percent of the amount for the items at the rate worked out and certified by the Manager (Rain Centre). The Project Engineer shall in all such cases promptly record all authorized extra items executed by the contractor including detailed measurements and quantities thereof in the Measurement Book. He shall neither enter any rate for the same in the Measurement Book nor include such extra items in the body of the bill. When the bill is received in the PMU, the Rain Centre shall prepare a separate statement for those extra items showing the items executed, quantity of each items worked out by him based on agreement conditions and amount for each item in the basis of the rate worked out by him. He shall also furnish a certificate to the effect that he has personally examined all the extra items and they are bonafide, the amount payable for these items will not be less than Rs…… (Amount to be specified) and there is no objection in paying 75 percent of this amount as a secured advance. One receipt of the bill with the above statement and certificate, the Executive Director may make payment not exceeding the amount recommended by the Project Engineer as a lump sum secured for works done but not billed for.

24. Deleted

25. The contractor shall not without the previous sanction in writing of the authority accepting the tender, execute any power of attorney in respect of any matter touching this contract and any such power of attorney executed without such sanction shall not be recognized by or be binding upon KRWSA or their Officers. It shall be entirely within the discretion of the authority accepting the tender either to grant such sanction or to refuse it or to revoke a sanction once given.

26. No part of the contract shall be subject without written permission of the Executive Director nor shall transfer be made by power of attorney authorizing other to receive payment on the contractor"s behalf.

27. The Executive Director or other sanctioning authority reserves the right to reject any tenders or all the tenders without assigning any reason thereof.

28. Deleted

29. Deleted.

30. Deleted

31. Deleted.

32. Deleted

32. Deleted.

33. Deleted

Unused balance if any at the time of completion or termination of the contract will not be accepted by the department. The cost of such materials amounting as it does to an excess over sanctioned requirements shall be recovered at book value 20 percent or current market rate whichever is higher and in addition to specific penalty rates as may be fixed by Director Technical in the form of KRWSA Order from time to time shall also be recovered at the direction of Executive Director

34. Tenderers should declare that they are not related to any KRWSA servant, who, is in charge of or having control of the work relationship in this will be restricted to father, mother, son, daughter, brother, sister, direct uncle, nephew, father-in-law, brother-in-law, mother-in-law, sister-in-law and first cousins of the officer concerned. If the above condition is found to have been contravened when they tender, the earnest money, security deposit of the tenderer / tender will be forfeited and the contract entered to will stand cancelled.

35. The contractor will provide his own tools and plant store sheds to store his own materials as well as those supplied by the department and will be entirely responsible for the proper use and safe custody of the later and also for any loss whatsoever.

36. In case of schedule rate contract, if different rates are quoted for the same specification of work under identical working condition at the same site in different appendices of the schedule the lowest quoted rate will be accepted for the items in all the appendices.

37. The contractor shall responsible for the safety of the labour employed by him and he shall be liable to pay the necessary compensation in case of accidents as per the Workmen"s Compensation Act.

The contractor will also be liable to abide by the fair wage clause condition attached separately.

38. Deleted

39. Deleted.

40. Deleted

41. The contractor should take a license under the current explosive rules to enable him to manufacture and possess the quantity of gun powder required by him for blasting if necessary.

42. The contractor shall employ engineering personnel as detailed below for a period of one to two years according to the tenure of the contract

Cost of Work executed	**No. of personnel to be employed**
For works costing Rs.2 lakhs up to Rs.5 lakhs	One Engineering Diploma Holder
For works costing from Rs.5 lakhs up to Rs.10 lakhs	One Engineering Graduate and one Diploma Holder
For works costing over Rs.10lakhs	One Engineering Graduate and two Engineering Diploma Holders

43. Tenders which are not in conformity with this tender notice are liable to rejection.

44. This tender notice with the conditions stated herein will form part of the contract documents.

45. In the case of schedule contracts when the rates quoted for a particular item in figures and words disagree, the rates quoted in words will be taken for the purpose of the settlement of the contract. The contractor is bound to accept these rates if the contract is awarded to him. Similarly in the case of percentage rate contract when the overall percentage rates quoted in figures and words disagree, the rates noted in words will be taken for the purpose of the settlement of the contract. The contractor is bound to accept these rates if the contract is awarded to him.

46. The entries in the tender schedule issued by the department are in no way to be corrected by the tenderers and if the tenders have to note anything they should note the same as a foot note in the bottom of the page. If any correction is made by the tenders in the tenderer schedule the tenders are likely to be rejected.

47. Deleted.

48. The quantities provided for in the schedule may vary widely and contractor should be prepared to do any excess over the schedule quantities his quoted rates for the works.

49. It shall be accepted as a condition of contract that the landed property or bank deposit based on which the solvency certificate was issued by the Revenue Department and produced during the time of Registration will not be alienated during the period of contract without the permission of KRWSA. vide G.O. (P) No. 36.74/P.W. dated 8th August 1974.

50. There shall be no arbitration for settlement of disputes. The provision for arbitration contained in MDSS/KDSS will/shall not apply to settlement of dispute in respect of this contract.

51. Deleted

52. **Performance Security and Retention Money**

Within 15 days on receipt of Order of Acceptance the successful bidder shall deliver the Performance Security (either Bank Guarantee or Bank Draft in favour of the Employer) for an amount equal to 5% of the contract price. Retention Money shall be deducted @ 5% of the running bill till the amount accumulated to 10% of the PAC, including Performance Security retention amount. The recovered retention amount from the running bill shall be

released after three months after payment of final bill. Performance Security shall be released after the defect liability period. The defect liability period is one year from the date of taking over the possession of the scheme. During this period the Contractor is responsible for rectifying any defects on free of cost to the Employer.

Contractor. Executive Director

SPECIAL CONDITIONS

Name of Work – Constructing Open Wells and supply and erection of pump sets in the premises of Anganavadies under Attappady ICDS Block (Agali and Pudur Grama Panchayaths) in Palakkad district, Phase – III activities. The programme is implemented with the financial support of Social Justice Department, Govt. of Kerala.

1. All works shall be done in conformity with the specification and condition in the contract in force in the KRWSA. The rates quoted shall be inclusive once, covering all the operation contemplated in the specification and tender schedule and all incidental work necessary for such operations such as shoring, bailing, form work, scaffolding etc. The rates quoted shall be inclusive of GST.
2. The rates quoted by the contractor for the various items shall be inclusive of all tools and plants required for the proper execution of work and all other incidental charges and separate claim for these will not be entertained under any circumstances.
3. The quantities shown in the schedule are only approximate and are subject to variations and the contractor is bound to do additional quantities of work if found necessary at his quoted rate.
4. All the rates quoted should be inclusive of GST also.
5. All the corrections and insertions in the original tender or schedule whether in the printed matter or elsewhere shall be attested by the tenderer.
6. The contractor has to quote for the specification and unit noted in the schedule. No correction or specifications unit of quantity is admissible and if they make any corrections in the specification etc., the same will be rejected if they have to note anything, they shall note the same as a foot note at the bottom of the page.
7. The earnest money deposit receipt should be attached to the tender property pledged, lest the tender will be rejected.
8. The contractor should note his Division Register Number and amount of permanent earnest money deposited by him in his tender.
9. The contractor should produce the declaration in the form attached.
10. The contractor is bound to carry out items of works which are not expressly or impliedly described in the tender schedule, plans, specifications and agreement but which are found necessary for the proper completion of the work during execution payment for such extra items will be made on the basis of extra item conditions vide Clause 23 (e) of Form No. G.W.D. 83.

11. For L.S. items the contractor will be paid only for the actual quantity of work done or materials supplied and labour engaged at agreed rates for such items and as per condition No.10 above for the extra items, but such payment will limited to the lump sum quoted by the contractor. If like fails to quote definite L.S. rates for such items, the L.S. amount provided in the schedule will be operative in his case.

12. Roofing tiles, hip tiles, wire-cut bricks, surki etc. required for the work should be purchased from suppliers approved by the Store Purchase Committee.

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22. The contractor will have to make his own arrangements to convey the materials supply by the department and for checking of materials and site shed etc. which are found necessary for the proper execution of the work. He will also be responsible for the safe custody of the materials till they are used on work.

23. The contractor should take out license for storage gun powder and explosive required for road blasting as per Explosive Act, 1940.

24. Empty cement bags will not be taken back but its cost at Rs. 1 per bag will be recovered towards value with usual sales tax.

25. Recovery for M.S. rods shall be affected at agreed rates for the quantity actually used plus, wastage, if any. The percentage of wastage will be fixed by the Director Technical, but at any rate it should not exceed 3 percent of the actual usage.

26. If the department undertake the supply of any materials, no claim for the extra payment due to delay in supply of those materials will be entertained.

27. If materials other than those specified in the tender are issued by the department, recovery will be effected at data rate plus storage plus sales tax or at current market rates at the time of issue whichever is higher.

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35. The payment for the earth work items will be made as per level measurements or tap measurements as per rules prevailing in the department.

36. All items should be carried out as per the relevant specification in the M.D.S.S. and all clauses of preliminary specification should be complied with.

37. The moulds, shuttering etc. required for the work should be made by the contractor and got approved by the Departmental Officers at site before use.

38. Tribes of the locality should be employed to the extent possible. The contractor should pay fair wages to the labour engaged on the work which will be fixed by the Government as specified in G.O. 18-8597/55/LO, dated 7th March 1956 and any dues to the labour will be recovered from his bill as fixed by the Departmental Officers.

39. The contractor alone is responsible for the safety of his labourers and damages if any payable under "Workmen"s Compensation Act" will be to his debit.

40. It shall be the contractor's responsibility to protect the public and his employees against accident from any cause during execution of the work and he shall indemnity the Government against any claims for injury to person or property resulting from any such accident, and he shall, where provisions of the "Workmen's Compensation Act" apply, take steps to properly insured against any claims there under.

41. The contractor shall be liable for any loss caused to the government on account of the above work including any that may arise due to non fulfilment of the contract. He should comply with the rules laid down in the central P.W.D. contract regulations regarding fair wages.

42. The work shall be completed in all respects and also at rate of progress within the time limit and stipulations in the Form No. 83 notice inviting tender failing which the contractor is liable to be fined as stipulated in special condition No. 49.

43. Defects, if any notices within 18 months (6 months in the case of road works) from the date of completion of the work, will be got rectified by the contractor, in default of which, this will be attended by the department and the cost made good from the contractor.

44. The contractor should produce latest sales tax and agricultural income tax clearance. Certificate and also income tax clearance certificate for receiving final payment.

45. The contractor shall be responsible for the payment of sales tax as per rules in force time to time and the rates quoted for various items remain unaffected by any changes that may be made from time to time in the rate at which such tax is levied. Sales Tax, Agricultural Income Tax and Income Tax due to Government from the contractor will be recovered from his bill for the work as per the advice of the authorities concerned.

46. All sums due to the Authority under or by virtue of this contract shall be recoverable first time the security furnished by the contractor and if the same is found in sufficient, such deficit amount shall be recoverable under the provisions of the Revenue Recovery Act for the time being in force as though the same were arrears of Land Revenue or in any other manner as the Government may deem fit.

47. The contractor agrees that before final payment shall be made on the contract he will sign and deliver to the Executive Director either in the measurement book or otherwise demanded a valid release and discharge from any and all claims and demands whatsoever for all matters arising out or connected with the contract, provided that nothing in this

clause shall discharge or release the contractor from his liabilities under the contract. It is further expressly agreed that the Executive Director in supplying the final measurement certificate need not be bound by the proceeding measurement and payments. The final measurements, if any if the Director (Technical) shall be final, conclusive and binding on the contractor.

48. In the tender notice and Form No. 83 notice inviting tender shall form part of the agreement.

49. The date fixed by the Director Technical for the commencement and completion of work as entered in this agreement shall be strictly observed by the contractor who shall pay damages at rates of (1) one percent on the estimated value of the contract for every day not exceeding 5 days that work remains un-commenced or unfinished, after the proper date and further to ensure good progress during the execution of works the contractor shall be bound unless the contract provides otherwise in all case in which the time allowed for work exceed one months to complete. One fourth of the whole work to be done when one fourth of the whole time allowed for it has elapsed, one half of the work when one half of time has elapsed and three fourth of work when three fourth of time has elapsed and the penalty for the failure in either of these cases shall likewise be that the contractor shall be subject to pay daily damages at the rate of (1) one percent on the estimated value of the amount of work that should be completed by that time, provided always that entire amount of damages to be paid under the provisions of this clause shall not exceed the whole amount of retention plus security deposit. All damages payable under the provisions of this clause shall be considered as liquidated damages to be applied to the use of the authority without reference to the actual loss sustained owing to the delay.

50. If during execution, the proportions of usage of materials issued departmentally alone is varied for which the price has been fixed in the tender, the quoted rate of the item will be allowed, effecting short or excess of departmental materials actually used as well as labour charges for handling the short or excess if any provided in the same position.

51. The Earnest Money Deposit of the unsuccessful tenders will be refunded immediately after tabulating the tenders keeping only the earnest money of the first three lowest tenders; the earnest money of the remaining two unsuccessful tenderers will be refunded within a week from the date of execution of agreement for the works.

52. The contractors should engage at his own cost a diploma holder (Civil Engineering) with sufficient practical experience for the proper execution and supervision of works costing from Rs. 2 lakhs to Rs. 5 lakhs and one Engineering Graduate and one Diploma Holder (Civil Engineering) for works costing Rs.5 lakhs up to Rs.10 lakhs and one Engineering Graduate and two Diploma Holders for works costing over 10 lakhs for one or two years according to the tenure.

53. All other conditions and specifications of contract are the same as those current in the department.

54. The method of measurements will be as per Indian Standard 1200-1958.

55. All concrete should be machine mixed and vibrated.

57. 1% of the Pac (except cost of departmental will be covered from the bill as per Rule 8(2) of the Kerala Construction Workers Welfare Fund Board Act 1989.

58. The tenderer/contractor must clearly understand that the settlement of claims either by part

bills or by final bill will be made only according to the availability of budget provision and allotment of funds made with the Manager Rain Centre in charge of the work under the respective head of account in which the work is sanctioned and arranged and also subject to the seniority of such bills. No claim for interest or for damages whatsoever shall be made for the belated settlement of claims of bills. No such claims shall be admitted by the Government.

The contract will be awarded to the successful tender on production of necessary Registration Certificate obtained from the Board as per Rule 9(1) of the Kerala Construction Workers Welfare Fund Board Act 1989.

59. The contractor who quoted very low rate will remit performance guarantee with a view to curb the tendency to quote low rate and cute the work unsatisfactorily.

a) If the quoted rate for a work is below 50% it will be rejected.

b) If the quoted rate for a work is between 25% and 50% below estimate rate, the contractor will remit performance guarantee equal to the difference between estimate PAC & quoted PAC. This will be released after satisfactory completion of work.

c) Time for executing agreement: Executive of agreement for works will be made within the time limit prescribed as follows.

1) Time allowed for executing the agreement without fine will be 20 days from the date of acceptance of tender.

2) Further time to days shall be allowed to execute agreement by realizing a fine of 1 percent of the PAC subject to a minimum of Rs. 500 and maximum Rs. 15000.

3) Tender will be rejected if agreement is not executed within 30 days and work will be awarded to the next lowest tenderer as stipulated under clause 4.10.6 of the code.

60. „Preliminary Agreement entered into on this ……..day of ……..two thousand and hundred and sixteen between ……for and on behalf of KRWSA (here in after called Executive Director) of the one"s. Part and Sri ……
…… (here enter full name and address of the contractor) here in after called the contractor of the other part for the execution of the agreement as well as for the execution of the work ……
……
whereas the Executive Director invited tenders for the work as stated above namely. ……
…… (here enter the name of the work) by notification No. …… dated …….. in the …….. AND AREAS Para 13 of the notice inviting tenders stated as follows.

Before commencing work or within a week after the date when the acceptance of the tender has been intimated to him, the tenderer shall deposit a sum sufficient to make up the balance of 5% of the probable value of the contract which together with the amount of the earnest money deposited shall be treated as security for the proper fulfillment of the same and shall execute and agreement for the work or if he fails to do this or in the case of the contract, maintain a specified rate of progress (to be specified in each case in the tender schedule) the earnest money and security deposit shall be forfeited to the Authority and fresh tenders shall be called for or the matter otherwise disposed off. If an a result of such measures, due to the default of the tenderer to pay the requisite

deposit, sign contract or take possession of the work any loss to Authority results, the same will be recovered from his as arrears of revenue, but should it be a savings to authority, the original contractor shall have no claim whatever to the difference. Recoveries on this or any other account will be made from the sum that may be due to the contractor on this or any other subsisting contractors or under the Revenue Recovery Act or otherwise as the Authority may decide.

Now therefore these presents wages and it is mutually agreed as follows:.

1. The terms and conditions for the said contract having been stipulated in the said tender form, to which the contractor has agreed, a copy of which is here to appended, which famous part of this agreement it is agreed that the terms and conditions stipulated therein shall bind the parties to this agreement except to the extent to which they are abrogated or altered by express terms and conditions hearing agreed to and in which respect the express provisions herein shall supersede those of the said tender form.

2. The contractor hereby agrees and undertakes to perform fulfill all the operations and obligations connected with the execution of the said contract work namely …… …… (hereinafter the name of the work) if awarded in favour of the contractor.

3. If the contractor does not come forward to execute the original agreement after the said work is awarded and selection notice issued in his favour or commits breach of any of the conditions of the contract as stipulated in clause 13 of the notice inviting tenders as quoted above within the period stipulated therein the Authority may rearrange the work otherwise or get it done departmentally at the risk and cost of the contractor and the loss so sustained by the Authority Recovery Act as if arrears of land revenue as assessed, quantified and fixed by an adjudicating Authority consisting of the Executive Director of KRWSA, Director Technical of KRWSA or any other officer of officers authorized by KRWSA, in this behalf taking into consideration the prevailing rates and after giving due notice to the contractor. The decisions taken by such Authority, officer or officers shall be final conclusive and shall be binding in the contractor.

4. The contractor further agrees that ant amount found due to the Authority under or by virtue of this agreement shall be recoverable from the contractor from his EMD and his properties, movable and immovable, as arrears of Land Revenue under the provisions of the Revenue Recovery Act for the time being in „inforce or in any other manner as the Authority may deem fit in this regard.

"The contractor further assures that it is clearly understood that the settlement of claims either by part bills or by final bills will be made only according to the availability of budget provisions and allotment of funds made with the Director Technical in charge of the work under the respective heads of account in which the work is sanctioned and arranged and also subject to the seniority of such bills. No claims for interest or for damages whatsoever shall be made for the belated settlement of claims of bills".

In witness where of Sri…… (here enter the name of the officer of the KRWSA) for and on behalf of KRWSA and Sri…… (the contractor) have set their hands on the day and year first above written signed by Sri…… …….. Office/ Officers of KRWSA.

In the presence of witness:

1.

2.

Signed and Delivered by Sri…… The contractor.

In the presence of witness:

1.

2.

FAIR WAGE CLAUSE

(a) The contractor shall pay not less than fair wages to labourers engaged by him on the work. " Fair Wage" means wage whether for time or piece work noticed at the time of inviting tenders for the work and where such wages have not been so notified the wage prescribed by the Central P.W.D. for the District in which the work is done.

(b) The contractors shall not withstanding the provisions of any contract to the contrary cause to paid a fair wage to labourers indirectly engaged on the work including any labour engaged by his sub contractor in connection with the said work as if the labourers had been immediately employed by him.

(c) In respect of all labours directly or indirectly employed in the works, the performance of the contractor's part of this agreement the contractor shall comply with or cause to be complied with the (the Central P.W.D. Contractor's labour) regulations made by Government in regard to payment of wages, wage period, deduction from wages, recoveries of wages not paid and deduction unauthorisedly made, maintenance of wages register, other items of employment, inspection and submission of periodical returns and all wage cards publication of scale of wages and returns and all other matters of like nature.

(d) The Manager Rain Centre or Project Engineer concerned shall have the right to deduct from the moneys due to the contractor and any sum required or estimated to be required for making good the loss suffered by a worker or workers by reasons of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or deductions made from his or their wages which are not justified by the terms of the contract or non-observance of the regulations.

(e) Vis-à-vis the Central Government, the contractor shall be primarily liable for all payments to be made under and for the observance of the regulations aforesaid without prejudice to his right to claim from his sub-contractor.

(f) The regulation aforesaid shall be deemed to be a part of this contract and breach thereof shall be a breach of this contract.

CLAUSE 45 OF M.D.S.S. – Accidents – Hoarding – Lighting – Observation – Watchmen.

(a) When excavations have been made or obstacles have been put in public through – fares or in places where there is any likelihood of accident, the contractor shall comply with any requirement of law on the subject, and shall provide suitable hoardings, lighting and watchman necessary.

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

(c) On the occurrence of an accident which results in the death of any of the workmen employed by contractor or which is so serious as to be likely to result in the death of any such workmen, the contractor shall within 24 hours of the happening of such accidents, intimate in writing to the Project Engineer concerned the fact of such accident. The contractor shall indemnify authority against all loss or damage sustained by authority resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines if any payable by authority a consequence of authorities failure to give notice under the Workmen"s Compensation Act or otherwise conform to the said Act in regard to such accident.

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

Contractor Executive Director

FORM OF DECLARATION

1. I…… do hereby declare that none of my relations as per the list given in Section 6 and Schedule 1 A of the Companies Act, 1956 is in charge of the above work or are having control over it.

2. I…… do hereby and distinctly and expressly declare and acknowledge that have read the Madras detailed standard specifications and the preliminary specifications therein.

Contractor

NOTE: If the contractor is found at any stage to have suppressed any information required, his earnest money for the work is liable to be forfeited and the contract entered into will stand cancelled.

SECTION-VI

Specific conditions for construction of open wells

1. The list of identified site is attached. The open well spot to be constructed be identified by the contractor if he requires after proper scientific investigations (bidder given work).Where there is no risk of pollution or contamination of source. The Anganvadi in which open well are to be constructed must be identified by the Rain Centre, KRWSA

2. The maximum depth of open well shall be finalized according to the safe yield from the open well..

3. The contractor is entitled for payment only if the tested yield of open well is not less than 3000 liters per day as per yield test to be carried out in non-monsoon season(that is, yield tested during months from October upto end of May before onset of monsoon only considered). If a discharge of not less than 750 liters per dayr, then the contractor is entitled for 25% of the total payment, and balance payment will only be given after ensuring a minimum tested yield of 3000liters per day through yield test.. The yield test must be carried out under the supervision of Engineer/Supervisor (rain centre) in charge of the work. Completion Report must be signed by the Contractor, if the tested yield is less than 3000 liters per day.

4. The contractor has to bail out and clean the open well after work is completed.

5. If the well is not able to give the minimum yield specified above, payment for the construction of the well shall not be entertained.

Signature of Bidder: Director (Technical)

Name of the Bidder:

Full Address……

Phone number……...

E mail……..

Date:

Place:

SECTION-VII

BILL OF QUANTIIES (BOQ)

Constructing Open wells, Supply and erection of pump sets in the Premises of Anganavadies under Attappady ICDS Block(Agali and Pudur Grama Panchayats)in Palakkad District;Phase III activities

Sl. No.	Item Description	Unit	Approximate Qty	Rate (Rs)	Amount (Rs)
1	Clearing grass and other overgrowth vegetation and small trees of grith upto 30cm including rooting out and removal of rubbish upto a distance of 150m outside the periphery of the area to be cleared	m2	100		
2	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift up to 1.50m including neat banking for diameter of well up to 2.50m	m3	36.8		
3	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 1.50m to 3.00m including neat banking for diameter of well up to 2.50m	m3	36.8		
4	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 3.00m to 4.50m including neat banking for diameter of well up to 2.50m	m3	36.8		
5	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 4.5m to 6m including neat banking for diameter of well up to 2.50m	m3	36.8		
6	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 6m to 7.5m including neat banking for diameter of well up to 2.50m	m3	36.8		
7	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 7.5m to9.00m including neat banking for diameter of well up to 2.50m	m3	36.8		
8	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 9.00m to 10.50m including neat banking for diameter of well up to 2.50m	m3	36.8		
9	Earth work open well excavation (above water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 10.50m to 12.00m including neat banking for diameter of well up to 2.50m	m3	36.8		
10	Earth work open well excavation (in or under water) in all classes of soil and conveying and depositing the soil with initial lead of 50m and lift from 12m to 13.50m including neat banking for diameter of well up to 2.50m	m3	36.8		

11	Supplying pre cast concrete ring of dia (1.5m-1.8m) and height 0.3m for the excavated well at site and lowering the rings inside the well using suitable lifting and lowering mechanism and placing at the bottom of well with good seating and providing one above the other and filling the gap with locally available gravelly materials etc as per the direction of department officers	Nos	225		
12	Forming cement concrete 1:4:8 platform 1.00m wide 10cm thick around the well and plastering over with cement mortar 1:4, 12mm thick floated hard and trowelled smooth including watering curing etc complete as per the direction of the department officers	m2	15		
13	Fabricating, supplying and fixing weld mesh well protection cover in two semicircular pieces with angler (ISA 50x50x6mm) along the diameter and at the middle, MS flat (50x6mm) at the outer circumferential edge to hold and stiffen the weld mesh (25x25x5mm) suitably welded over the angle iron/flat frame and fix it over the random rubble masonry parapet wall with suitable locking arrangements between the two fabricated semicircular weld mesh etc, to prevent entry/throwing of waste material inside the well etc as per the direction of department officers.	Nos	5		
14	Supply, erecting, trial run and commissioning of open well submersible pump-set (pump-set to be suitably hanged using nylon rope from the frame fitted over the well parapet) of suitable capacity to pump (to fill the 500 litre tank in 30 minutes) water from the well to the 500 litre capacity over head service tank already installed in position including cost of delivery pipe (best quality flexible hose) suitably connected to the inlet of the service tank, cable (power point to pump), robotic starter etc including cost of all materials and labour charges etc complete.	Nos	5		
15	Electrification charges for availing single phase connection including cost of meter board, two pole isolator, fuse carrier, neutral link, indicator and its labour charges etc complete as per the direction of officers in charge.	Nos	5		
16	Power connection charges including payment to KSEB (as per actual shall be reimbursed to the contractor on production of original receipts of KSEB	Nos	5		
17	Cost of carrying out water quality test	Nos	5		

Executive Director
KRWSA

Signature of Contractor

List of Anganawadies where open well sites are proposed				
Sl No.	Name of GP	Name of Anganwady	Anganwady No.	Proposed depth
1	Agali	Kakkupadi	7	12m
2	Agali	Rajagiri	12	12m
3	Agali	Kuchimedu	35	8m
4	Agali	Nakkupathi	51	8m
5	Pudur	Pottikal	156	8m