

Tender No. 03 of 2022 – 2023 Date : 04.07.2022

**OFFICE OF THE EXECUTIVE ENGINEER
PUBLIC HEALTH ENGINEERING DEPARTMENT
RURAL WATSAN DIVISION, LUNGLEI.**

**TENDER DOCUMENT FOR SURVEY, DESIGN,
SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF SOLAR
PUMPING SYSTEM ALL COMPLETE WITH 5 YEARS FREE
SERVICE/ MAINTENANCE
FOR
CHITHAR WSS (Solar Pumping)
(UNDER Jal Jeevan Mission)**



| | |
|---|-----------------------------------|
| Tender Amount | Rs 31,00,000.00 |
| Earnest Money | Rs 62,000.00 |
| Last Date of Sale of Tender | 12.07.2022 |
| Last Date of Submission of Tender | 15.07.2022 upto 12.00 Noon |
| Date of Opening | 15.07.2022 at 1:00 Pm |
| Cost of Tender Document | Rs 500 |
| Time Allowed for Execution of Work | 3 months |

PRESS TENDER NOTICE

The Executive Engineer, PHED, Rural WATSAN Division, Lunglei, on behalf of the Governor of Mizoram invites bids two envelope system with sealed item rate tender in prescribed form affixing Court Fee Stamp worth not less than Rs. 7.5/- (non-refundable) for non-tribal and up-to-date House Tax Payee Certificate for tribal from reputed contractors experienced in similar type of works. The tender will be received in the office of the undersigned up to **12:00 Noon** on **15.07.2022**. Late submission of tender will not be accepted. The tender so received will be opened on 15.07.2022 at **1:00 Pm** in presence of the intending tenderer or his authorized representative. If for any unforeseen reason, the tenders could not be received & opened on the stipulated date & time, the same will be received and opened in the next working day at the same time for which no separate communication will be made.

| NIT No | Name of Work : Survey design, supply, installation, testing & commissioning of Solar Pumping System (With Standby) | Tender Amount | Earnest Amount | Date of Opening | Time of Completion | Cost of Tender |
|-------------|--|-----------------|----------------|-----------------|--------------------|----------------|
| 01 of 22-23 | Sertlangpui WSS | ₹40,00,000.00 | ₹80,000.00 | 15.07.2022 | 3 Months | ₹500.00 |
| 02 of 22-23 | Thingfal WSS | ₹1,06,00,000.00 | ₹2,12,000.00 | 15.07.2022 | 3 Months | ₹1,500.00 |
| 03 of 22-23 | Chithar WSS | ₹31,00,000.00 | ₹62,000.00 | 15.07.2022 | 3 Months | ₹500.00 |
| 04 of 22-23 | Vaisam WSS | ₹30,50,000.00 | ₹61,000.00 | 15.07.2022 | 3 Months | ₹500.00 |
| 05 of 22-23 | Sailen WSS | ₹32,40,000.00 | ₹64,800.00 | 15.07.2022 | 3 Months | ₹500.00 |
| 06 of 22-23 | Bualpui V WSS | ₹1,30,00,000.00 | ₹2,60,000.00 | 15.07.2022 | 3 Months | ₹1,500.00 |
| 07 of 22-23 | New Dawn WSS | ₹38,00,000.00 | ₹76,000.00 | 15.07.2022 | 3 Months | ₹500.00 |
| 08 of 22-23 | Kanghmun South WSS | ₹75,00,000.00 | ₹1,50,000.00 | 15.07.2022 | 3 Months | ₹1,000.00 |
| 09 of 22-23 | Ramlaitui WSS | ₹70,00,000.00 | ₹1,40,000.00 | 15.07.2022 | 3 Months | ₹1,000.00 |
| 10 of 22-23 | S.Zote WSS | ₹36,00,000.00 | ₹72,000.00 | 15.07.2022 | 3 Months | ₹500.00 |

Detailed tender document may be obtained from the office of the undersigned on any working days from 5.7.2022 – 12.7.2022 on payment of tender cost as mentioned above (non -refundable) without which, the tender shall summarily be rejected. The undersigned reserves the right to reject any or all of the tenders without assigning any reason thereof. **The same may also be downloaded from PHED's website at www.phed.mizoram.gov.in. If the documents are downloaded from the website, the cost of tender document shall be included in a separate envelope in the Technical Bid.**

Sd/

(LALTLANCHHUNGA)

Sr. Executive Engineer, PHED

Rural WATSAN Division, Lunglei.

Memo No.W-11026/1/11-RWD/EE(L)/PHE/114

: Dated Lunglei the 4th July 2022

Copy to-

1. PS to Hon'ble Minister, PHED, Mizoram for favour of your kind information.
2. The Secretary (PHED), Govt of Mizoram for favour of kind information.
3. The Engineer-in-Chief (PHED), for favour of kind information.
4. The Chief Engineer Zone - II (PHED), for favour of kind information.
5. The Superintending Engineer (PHED), Lunglei WATSAN Circle, for information.
6. The District Information Officer, Lunglei. Information and Public Relation Department, Govt. of Mizoram for information and necessary action with a request to publish the tender notice in two issues of local newspaper.
7. The System Analyst, PHED for information and upload of tender notice and documents to PHED's website.
8. Concerned file.
9. Office notice board.


Sr. Executive Engineer, PHED
Rural WATSAN Division. Lunglei.

| <u>CONTENTS</u> | <u>Page No</u> |
|--|-----------------------|
| Press tender notice | 1-2 |
| Contents | 3 |
| Notice inviting tender | 4-9 |
| Purchase receipt of tender document | 10 |
| Declaration of tenderer | 11 |
| General conditions of contract | 12-16 |
| General rules and directions | 17-20 |
| Special conditions for contractor's own design | 21 |
| General specifications | 22-23 |
| Scope of works | 24 |
| Detailed specification of works | 25-29 |
| Bill of quantities | 30 |
| Schedule of quantities | 31 |
| Qualification information | 32-34 |
| Sample forms | |
| Power of attorney for signing of bid | 35 |
| Bid security declaration form | 36 |
| Certificate of understanding | 37 |

NOTICE INVITING TENDER

Item rate tender is invited on behalf of Governor of Mizoram from reputed registered contractors for the work: Survey, design, supply, installation, testing & commissioning of solar pumping system all complete with 5 years free service maintenance for **Chithar** W.S.S including constructions of civil works.

1. The enlistment of contractor should be valid on the last date of sale of tender.
In case the last date of sale of tender is extended, the enlistment of contractor should be valid on the original date of sale of tender.
 - a. The work is estimated to cost **Rs 31,00,000.00** inclusive of all taxes viz. GST, Cess etc.
 - b. Tender will be issued to contractors registered under CPWD/MPHED/ Indian Railways/ NEC with definite proof from appropriate authority. Standing order for eligibility of different classes of contractor corresponding on the tendered amount will be followed.
 - c. Joint venture may be allowed.
2. Tender document consisting of plans, specifications, schedule of quantities of the various classes of work to be done and the set of terms & conditions may be seen in the office of the Executive Engineer PHED, Rural WATSAN Division, Lunglei, between hours of 11:00 AM - 3:00 PM every day from **05/07/2022 - 12/07/2022** except on Saturday and Sunday and public Holiday.
3. Tender document, excluding standard form, will be issued from this office, during the hours specified above, on payment of **Rs. 500/- (Rupees Five Hundred only)** in cash.
4. Receipt of application for issue of forms shall be stopped by 3:00 Pm on 12, 07, 2022. Receipt of tender shall be stopped by 3:00 Pm on 12, 07, 2022.
5. Tender must be accompanied with **earnest money** of **Rs 62,000.00** in the form of bank guarantee/ fixed deposit receipt or demand draft of a scheduled bank in Mizoram issued in favour of the Executive Engineer, PHED, Rural WATSAN Division, Lunglei. The tender document along with supporting documents and designs shall be placed in one sealed envelope marked '**Technical Bid**'. Another sealed envelope marked '**Financial Bid**' shall contain only proforma of schedules (Schedule A). Both the envelopes shall be submitted together in another sealed envelope with the name of work and due date of opening written on it.

ELIGIBILITY cum TECHNICAL BID shall comprise of the following:

- i) GST registration
- ii) House tax payee certificate/court fee stamp
- iii) Earnest money
- iv) Qualification information in prescribed forms and supporting documents
- v) Power of attorney for signing of bid
- vi) Bid security declaration
- vii) Certificate of understanding
- viii) Designs, drawings and charts as necessary to comply with requirements

FINANCIAL BID shall comprise of the following:

i) Proforma of schedules (Schedule A)

6. The bidder whose tender is accepted will be required to furnish **performance guarantee** of 3% (Three percent) of the bid amount within 10 days from issue of Letter of Intent. This guarantee shall be in the form of deposit at call receipt/ demand draft/ government securities/ fixed deposit receipts/ bank guarantee bonds of any scheduled bank in Mizoram. In case the selected bidder fails to deposit the said performance guarantee within the period as indicated, the contract shall be liable to be terminated.
7. Financial eligibility criteria for tenderer should be:- Average annual financial turnover on construction works should be at least 50% of estimated cost put to tender during the immediate last three consecutive financial years.
8. Canvassing whether directly or indirectly, in connection with tenderer is strictly prohibited and the tender submitted by the contractor who resort to canvassing will be liable to rejection.
9. The tenderer shall not be permitted to tender for works in the Circle/ Division responsible for award and execution of contracts, in which his near relative is posted as Accounts Officer or as an officer in any capacity between the grades of Executive Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the department. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this department.
10. No engineer of gazetted rank or other gazetted officer employed in engineering or administrative duties in the department is allowed to work as a contractor for a period of one year after his retirement from government service without the previous permission of the Government of Mizoram in writing. Engagement of any such official shall render the bid as invalid.
11. The tender document along with latest CPWD Form 8 shall form part of the document. However, applicability of clauses of CPWD Form 8 listed at General Rules and Directions of this NIT may be referred, if any contradiction arises between any clause of this NIT and clauses in CPWD Form 8, clauses in NIT supersede clauses in CPWD Form 8. If any clause of this NIT is not mentioned clearly, then CPWD Works Manual will be referred and applied.
12. The Government shall deduct CESS & GST, etc as admissible on the value of work done from each bill of the contractor as per prevailing government instruction/orders. In lieu, the department shall issue a certificate of deduction of the tax at source to the contractor.
13. Quoted rate above or below 3% of the tendered amount shall be rejected summarily.
14. No tender will be considered for acceptance unless tender document is duly purchased by the intending tenderer. A copy of the receipt for the money deposited against purchase of tender document shall have to be submitted along with the tender as a proof of purchasing the same. If the document is downloaded from the website, the cost of tender documents may be included in a separate envelope in the technical bid.

15. **Tenderer has to read all terms and conditions of this tender documents carefully. Tenderer has to accept and comply with all terms and conditions of this tender. Overwriting in the proforma of schedules is not acceptable and corrections, if any should be initialled and dated by the tenderer.**
16. Defect liability period of the contract shall be 12 (twelve) months from the date of commissioning. Any defect noticed in the system during this period shall have to be rectified by the contractor at his/ their own cost and risk and any further defect during the other 4 (four) years of maintenance period shall have to be rectified by the contractor at free of cost and materials cost will be borne by the department/Village Water & Sanitation Committee.

Comprehensive Operation and Maintenance:

- The contractor shall provide 5 years comprehensive maintenance of the solar photovoltaic water pumping system set, which shall include corrective maintenance as well as routine service visits during guarantee period. The bidder shall rectify defects developed in the system as specified above.
 - Apart from monitoring and regular periodical maintenance, inspection of system has to be done quarterly basis during the period specified above. Maintenance report has to be maintained in a prescribed table format in a register maintained at the site which should contain month, inspection date, action taken against the defects found in the system and remarks of the representative of the department not below the rank of Junior Engineer or representative of VWSC along with signatures of both parties.
17. During this period of operation and maintenance, training on operation and maintenance shall be given to VWSC/department who will be responsible for operation and maintenance of the system after expiry of maintenance period. After completion of 5 years operation and maintenance period, tripartite agreement shall be signed at the time of handing over.
 18. The Public Health Engineer Department, Govt. of Mizoram reserves the right to reject or accept any or all tenders wholly or partly with proper reason on the ground considered advantageous to the department whether it is the lowest tender or not.
 19. The Public Health Engineer Department, Govt. of Mizoram takes no responsibility for delay, loss or non-receipt of tenders sent by post. Unsealed tenders shall not be considered for acceptance.
 20. The tender document shall remain the property of the Public Health Engineering Department, and if obtained by one intending tenderer, shall not be used by any other tenderer.
 21. The tender shall be completely filled in all respects and shall be tendered together with requisite information. Any tender incomplete in any particular shall be liable to be rejected.
 22. Tenderers who are not the manufacturer or authorised dealer shall produce support letter from the manufacturer or authorised dealer in regard to supply, installation, testing and commissioning.
 23. Only the bid of tenderer having an experience of design, supply, installation and commissioning of at least one similar work prescribed in the tender for a single project under government scheme will be considered as eligible for opening of financial bid.

24. The tendering authority reserves the right to select any qualified bidder for the tendered work given there is sufficient evidence that it is in the best interest of the quality of work.
25. List of staff and their **educational qualifications** (with attested copy) of those who are proposed to be engaged for the work and after sale service shall be submitted along with the tender, failing which, the tender may be termed as invalid.
26. Bidder shall have to submit copies of GST registration number issued by the appropriate authority.
27. The terms, conditions and specifications mentioned in tender document shall be binding on tenderer and no condition or stipulation contrary to the conditions shall be acceptable. It may please be noted that the tenderer who do not accept terms and conditions stipulated in this tender document, their offers shall be liable to be rejected without assigning any reason whatsoever. ***Tenderer should sign in each and every numbered page (i.e. blank pages need not be signed) as a token of acceptance of each and every terms of the tender document.*** The pages of the tender should be submitted in proper way in an organized manner.
28. **Solar photovoltaic modules:**
- Module supplied with the SPV water pumping system shall have certificate as per **IS 14286/IEC 61215** specification or equivalent national or international/standards. The name plate shall conform to **IS 14286/IEC 61215**. STC performance data supplied with the modules shall not be more than one year old.
 - Modules must qualify to **IEC 61730** part I and Part II for safety qualification testing.
 - There should be automatic cleaning device for solar PV modules.
 - There should be a name plate fixed inside the module which will bear the following specifications:
 - a. Name of manufacturer
 - b. Model number
 - c. Serial number
 - d. Year of manufacture
29. Tenderer must visit the proposed project site to conduct thorough site survey and techno-economic feasibility studies of the project on his own expenses. The tenderer shall also obtain a site visit certificate from the concerned JE which will be verified by SDO, **Rural WATSAN Sub-Division, Lunglei South**, and shall be submitted in original along with the tender. **The site visit certificate shall be accompanied by self-photographs of the visitor at each proposed solar power plant along with Lat-Long of proposed site printed on the photographs.** Tenders submitted without the site visit certificate shall be summarily rejected. The department shall scrutinize thoroughly each design of all tenderers and shall only consider the tenderer(s) whose design is/are found to be technically and economically feasible under the condition of Mizoram.
30. The system must be designed and planned using computer based tools that can closely model the irradiation, rainfall pattern, power generation from solar array, typical pump performance by considering Lat-Long of proposed solar power plant. Planning and design should be done showing monthly water output in line with water requirement. Due to the complex nature and multiple variables involved in calculating solar plant performance for every hour of the year, it is

deemed unrealistic to be able to do this without the use of proven computer-based modelling tools. The discharge/day must be of the following requirements:

- a. Average daily water delivery within a year in m³/day
- b. Average daily discharge of leanest month shall meet ultimate daily requirement
- c. Water delivery pattern of a whole year in m³

31. The tenderer must submit the design in binding clearly showing all the design parameters for each stage. The check list will be:

- i. Motor & pump efficiency (%)
- ii. Rated power of pump set (KW)
- iii. SPV efficiency (%) considered
- iv. Size of solar power plant (KWp)
- v. Flow rate (m³/ hour) at duty head (Required discharge shall be achieved at duty head)
- vi. Dynamic head (m)
- vii. Total head (m)
- viii. Head loss (m)
- ix. Speed of motor (rpm)

Note: Hazen-Williams or Darcy-Weisbach formula may be used in calculation.

The following must also be included:

- i. Irradiation data considered for the proposed solar power plant
- ii. Table showing average daily discharge for each month for the whole year
- iii. Energy output with respect to rainfall throughout the year
- iv. Data sheets/ customized pump characteristics

32. Sub-letting of the works through sub-contract without the prior knowledge of the department will not be allowed. Prior permission in writing should be taken from the engineer-in-charge.

33. Successful tenderer shall be responsible for providing, arranging and maintaining all materials, tools & plants, water, electricity access, facilities, etc at his own cost for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Before supplying the machineries, successful tenderer must submit test report.

34. The system must have double dry run protection to protect the system in event of low water levels. The dry run protection must be of modular design, exchangeable and preferably a float mechanism.

35. The system must have remote monitoring system for enhancing accountability of technical parameters. Size of power cable proposed shall be furnished.

36. The date of starting the work will be 15 days from the date of signing agreement. Contract agreement shall be signed within 10 days from issue of LOI.

37. **Handing over of the system to the department/VWSC only after:**

- Testing and trial of the installed system
- Operator training on repair and maintenance of the system
- Handing over of warranty papers to the department/VWSC
- Handing over of operation and maintenance manual/document to the department/VWSC
- Completion report along with complete drawing to the department/VWSC

38. **Warranty:**

- a. PV modules must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
 - b. Whole system including pump set shall be warranted for 5 years. Solar pumping systems must be warranted against any manufacturing/design/installation defects for a minimum period of 5 years.
 - c. Sufficient spares for trouble free operation during warranty period shall be made available as and when required.
 - d. A warranty card for modules and motor pump set should also be provided to beneficiary at the time of handing over of the system.
39. The successful tenderer should submit detailed technical diagrams and specifications of solar pumping system within 1 (one) month after commissioning of the system.



(LALTLANCHHUNGA)
Sr. Executive Engineer, PHED
Rural WATSAN Division. Lunglei.

PURCHASE RECEIPT OF TENDER DOCUMENT

Item rate tender & contract for work

- (A) **Tender No : 03 of 2022-2023**
- (B) **For the work of Survey, design, supply, installation, testing & commissioning of solar pumping system all complete with 5 years free service maintenance for CHITHAR W.S.S including constructions of civil works**
- (C) **To be submitted latest by 12:00 Noon on 15/07/2022**
- (D) **To be opened at 1:00 Pm on 15/07/2022**

Issued to:

.....

Signature of officer issuing the document

Designation:

Date of Issue:

DECLARATION OF TENDERER

I/We have read and examined the notice inviting tender & its clauses of contract, general conditions of contract, general rules and directions, special conditions for contractor's own design, general specifications, scope of works, detailed specification of works, bill of quantities, schedule of quantities, qualification information and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Governor of Mizoram within the time specified and in accordance to all respect with the instructions in general conditions of contract, general rules and directions, special conditions for contractor's own design and general specifications.

I/We agree to keep the tender open for ninety (90) days from the due date of its opening and not to make any modification in its terms and conditions.

A sum of **Rs. 62,000.00** is hereby forwarded as **earnest money** in the form of bank guarantee/ fixed deposit receipt or demand draft of a scheduled bank in Mizoram. I/We agree to furnish the prescribed **performance guarantee** within prescribed period, failing which the department have the right to black list me/us and will not bid any contract under Public Health Engineering Department for a period of 2 (years). Further, if i/we fail to commence work as specified, i/we agree without prejudice to any other right or remedy available in law that the said performance guarantee shall be forfeited for the property of the Government of Mizoram.

I/We hereby declare that i/we shall treat the tender document, drawings and other records connected with the work as secret/confidential documents and shall not communicate information/derived there to any person other than a person to whom i/we am/are authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

Dated:

Witness

Signature:

Name :

Postal address:

Mobile number:

Tenderer

Signature:

Name:

Postal Address:

Mobile number:

GENERAL CONDITIONS OF CONTRACT

| | | |
|------------------------------------|------|--|
| 1. Signing of contract | | Successful tenderer/contractor, on acceptance of his tender by the accepting authority, shall, within 10 days from the date of issue of letter of intent, sign contract agreement. |
| 2. Performance guarantee | i | Contractor shall submit an irrevocable performance guarantee of 3% (three percent) of his bid amount within 10 (ten) days from the date of issue of LOI. |
| | ii | The performance guarantee shall be valid up to the stipulated date of completion plus 60 days beyond that. |
| | iv | In the event of the contract being terminated or rescinded, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Governor of Mizoram. |
| 3. Recovery of security deposit | | An amount of 2.5% of the gross amount of each bill shall be deducted as a security deposit. This amount shall be released after completion of maintenance period. |
| 4. Compensation for delay | (i) | For delay of work, the contractor shall pay compensation to the government @ 1.5% per month not exceeding 10% of the tendered value of work or of the tendered value of the item or group of completed items of work. |
| | (ii) | The amount of compensation may be adjusted or set-off against any sum payable to the contractor under this or any other contract with the Government. |
| 5. Time and extension | | Time allowed for execution of the work or extended time as specified shall be the essence of the contract |
| 6. Terms and conditions of payment | | <ol style="list-style-type: none">1. Payment will be made to the contractor in time on submission of bills based on progress of the work subject to availability of fund.2. The contractor shall be at liberty to submit bills for payment every month during the construction period. While payment of such bills, an amount of 2.5% of the gross amount of each bill shall be deducted as a security deposit. |

7. Materials to be provided by the contractor

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the government.

The contractor shall, at his own expense and without delay; supply to the engineer-in-charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the engineer-in-charge furnish proof, to the satisfaction of the engineer-in-charge that the materials so comply. The engineer-in-charge shall within thirty days of supply of samples or within such further period as he may require intimate to the contractor in writing whether samples are approved by him or not. If samples are not approved, the contractor shall forthwith arrange to supply to the engineer-in-charge for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the engineer-in-charge shall be issued after the test results are received.

The contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the engineer-in-charge. The contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the engineer-in-charge may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the engineer-in-charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The engineer-in-charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

The engineer-in-charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the engineer-in-charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The engineer-in-charge shall also have full powers to require other proper materials to be substituted thereof and in case of default, the engineer-in-charge may cause the same to be supplied and all costs which may attend such removal and substitution shall be borne by the contractor. The contractor shall, at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped at least with testing equipments.

| | |
|--|--|
| 8. Mobilization advance | Mobilization advance of 10% of the contract value at 10% per annum simple interest shall be given to the contractor if applied for in writing. |
| 9. Work to be executed in accordance with specifications, drawings, orders, etc. | <p>The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the engineer-in-charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department or in any Bureau of Indian Standard or any other, published standard or code or schedule of rates or any other printed publication referred to elsewhere in the contract.</p> <p>The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labor and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.</p> |
| 10. Foreclosure of contract due to abandonment or reduction in scope of work | <p>If at any time after acceptance of the tender, government shall decide to abandon or reduce the scope of the works for any reason whatsoever and hence not require the whole or any part of the works to be carried out, the engineer-in-charge shall give notice in writing to that effect to the contractor and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.</p> <p>The contractor shall be paid at contract rates, full amount for works executed at site.</p> |
| 11. Suspension of work | <p>(i) The contractor shall, on receipt of the order in writing of the engineer-in-charge, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the engineer-in-charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof:</p> <p>The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the engineer-in-charge.</p> |
| 12. Compensation in case of delay of supply of material by government. | The contractor shall not be entitled to claim any compensation from government for the loss suffered by him on account of delay by government in the supply of materials where such delay is covered by the difficulties relating to the supply of wagons, force majeure or any reasonable cause beyond the control of the government. |

| | |
|--|---|
| | This will not be applicable for works where no material is stipulated. |
| 13. Action in case work not done as per specifications | All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the engineer-in-charge, his authorized subordinates in charge of the work and all the superior officers, officers of the quality assurance unit of the department or any organization engaged by the department for quality assurance and of the Chief Technical Examiner's office, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself. |
| 14. Contractor liable for injuries, damages, defects | If the contractor or his working people, equipments or machineries cause injury to human/animals or break, deface, destroy any property or cause any damage to any item of the work, from any cause whatever or if any defect or other faults appear in the work, the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense. |
| 15. Contractor to supply tools & plants etc. | The contractor shall provide at his own cost all materials, machinery, tools & plants required for work execution and maintenance. |
| 16. Labor laws to be complied by the contractor | <p>(i) The contractor shall obtain a valid license under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.</p> <p>The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996.</p> <p>Any failure to fulfill these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.</p> |
| | (ii) No labour below the age of eighteen years shall be employed on the work. |

| | |
|---|---|
| | <p>(iii)The engineer-in-charge may require the contractor to dismiss or remove from the site of the work any person or persons in the contractors' employ upon the work who may be incompetent or misconduct himself and the contractor shall forthwith comply with such requirements. In respect of maintenance/ repair or renovation works etc. where the labour have an easy access to the individual houses, the contractor shall issue identity cards to the laborers, whether temporary or permanent and he shall be responsible for any untoward action on the part of such labour. AE/JE will display a list of contractors working in the colony/Blocks on the notice board in the colony and also at the service centre, to apprise the residents about the same.</p> |
| 17. Work to be executed as per the approval of engineer-in-charge | All works to be executed under the contract shall be executed under the direction and subject to the approval of the engineer-in-charge who shall be entitled to direct at what point or points and in what manner they are to be commenced, and from time to time carried on. |
| 18. Settlement of disputes & arbitration | All questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt by a Dispute Redressal Committee duly constitute by the State Government: |
| 19. Levy /taxes payable by contractor | (i) Sales tax/VAT/ GST, etc. Building and other Construction Workers Welfare Cess or any other tax or Cess in respect of this contract shall be payable by the contractor and government shall not entertain any claim whatsoever in this respect. |
| 20. Termination of contract on death of contractor | Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the divisional officer on behalf of the Governor of Mizoram shall have the option of terminating the contract without compensation to the contractor. |

GENERAL RULES AND DIRECTIONS

| | |
|--------------------------|---|
| Officer inviting Tender: | Sr.Executive Engineer, PHED Rural WATSAN Division, Lunglei |
|--------------------------|---|

Definitions:

| | | |
|---------|--|--|
| 2(v) | Engineer-in-charge | Sr.Executive Engineer, PHED Rural WATSAN Division, Lunglei. or Concerned Sub-Divisional Officer |
| 2(viii) | Accepting authority | Chief Engineer Zone - II, PHED. Mizoram |
| 2(xi) | Standard schedule of rate | MPWD/PHE Schedule of Rates |
| 2(xii) | Department | PHE Department |
| 9(ii) | Latest standard CPWD Contract Form GCC | Applicability of the Clauses under CPWD Form 8 for this particular tender are listed below |

Clause 1:

| | | |
|---|--|---------|
| 1 | Time allowed for submission of performance guarantee from the date of issue of letter of intent: | 10 Days |
| 2 | Maximum allowable extension beyond the period provided in (1) above | 5 Days |

Clause 1(A):

| | | |
|---|------------------|-----------------------------|
| I | Security deposit | 2.5% of the tendered amount |
|---|------------------|-----------------------------|

Clause 2:

| | | |
|---|---|----|
| I | Authority for fixing compensation under clause 2: | SE |
|---|---|----|

Clause 2A (Incentive for early completion):

| | | |
|---|---------------------------------------|----|
| i | Whether Clause 2A shall be applicable | No |
|---|---------------------------------------|----|

Clause 3& 3A (When contract can be terminated) : Applicable.

Clause 4 (Contractor liable to pay compensation even if action not taken under Clause3) : Applicable.

| | | | |
|--------|--|---|--|
| i | Number of days from the date of issue of letter of intent for reckoning date of start: | 15 Days | |
| ii | Milestone(s) as per table given below:- | | |
| Sl. No | Description of milestone (Physical) | Time allowed in days for execution of work (from date of start) | Amount to be withheld in case of non-achievement of milestones |
| | No description of milestone (Physical) in The DPR | As before column | Penalty clause applicable as per clause-2 of CPWD Form-8. |
| | “NIL” | “ NIL” | |
| iii | Time allowed for execution of work:: | | 3 Months |
| iv | Authority to decide: | | |
| | (i) Extension of time: | | As per CPWD Works Manual |
| | (ii) Rescheduling of mile stones: | | SE i/c |

Clause 5 (Time and extension for delay):

Clause 6, 6A (Measurements of work done) : Clause applicable

Clause 7 (Payment on inter to intermediate certificate to be regarded as advances) : Not applicable

| | |
|--|---------|
| Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment: | Rs..... |
|--|---------|

Clause 8, 8A and 8B (Completion Certificate and Completion Plans) : Applicable

Clause 9 (Payment of bill): Payment will be made depending on the availability of fund and no other claims shall be made by the contractor. Interest shall not be claimed by the contractor if payment is not made due to unavailability of fund.

Clause 10A (Materials to be provided by contractor) : All materials will be provided by the contractor at his own expense.

List of testing equipment to be provided by the contractor at site lab (Contractor may list down all testing equipments).

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | 5 | 6 |

Clause 10B(ii): Mobilization advance: Applicable if the contractor made a request in writing provided fund is available.

Clause 10C: Payment on account of increase in price/wages due to statutory orders : Not applicable.

Clause 10CA: Payment due to variation in prices of materials after receipt of tender : Not applicable

Clause 10CC: Payment due to increase/decrease in prices/wages : Not applicable

Clause 10D: Dismantled materials Govt. property : Applicable.

Clause 11: Applicable, all specification and appropriate latest IS Code and CPHEEO Manual will be followed for each item.

Clause 12: Deviation on extra items, substituted items, quantities etc. : Applicable

Clause 13: Foreclosure of contract due to abandonment or reduction in scope of work : Applicable

Clause 14: Carrying out part work at risk & cost of contractor : Applicable

Clause 15: Suspension of work : Applicable

Clause 16: Action in case work not done as per specifications : Applicable

Clause 17: Contractor liable for damages, defects during maintenance period : Applicable

Clause 18: Contractor to supply tools and plants :

List of mandatory machinery, tools & plants to be owned or leased by the contractor are as follow. Contractor has to list down the items with quantity, owned or leased and related documents must be furnished.

| Sl.No. | Item Description | Quantity | Unit | Owned/Leased |
|--------|----------------------------------|----------|------|--------------|
| 1 | Generator 3 KVA or more capacity | 1 | No | |

| | | | | |
|----|---|----|----|--|
| 2 | Concrete mixer of full bag capacity or more | 1 | No | |
| 3 | Needle vibrator (Electric driven) | 1 | No | |
| 4 | Needle vibrator (Engine driven) | 1 | No | |
| 5 | Excavator | 1 | No | |
| 6 | Pickup/ tipper four wheel drive | 1 | No | |
| 7 | Concrete slump testing cone | 1 | No | |
| 8 | Jackhammer | 1 | No | |
| 9 | Digital clamp meter (AC/DC) | 1 | No | |
| 10 | Safety equipments | | | |
| | a. Safety helmets | 10 | No | |
| | b. Safety harness | 4 | No | |
| | c. Ropes | 5 | No | |
| | d. Fire extinguishers | 4 | No | |
| | e. First aid kits | 4 | No | |

Clause 18A & 18 B : Applicable

Clause 19 (Labour Laws to be complied by the contractor) : Applicable

Clause 20 (Minimum Wages Act to be complied with) : Applicable

Clause 21(Works not to be sublet. Action in case of insolvency) : Applicable

Clause 22: Applicable

Clause 23 (Changes in firm's constitution to be intimated) : Applicable

Clause 24 : Applicable

Clause 25: (Settlement of disputes & arbitration) : Applicable

| | |
|---|--|
| Constitution of Dispute Redressal Committee (DRC) | Competent authority to appoint |
| As per provisions of CPWD Works Manual. | Secretary to the Govt. of Mizoram, PHE Department. |

Clause 26: (Contractor to indemnify Govt. against patent rights) : Applicable

Clause 27: (Lumpsum provisions in tender) : Applicable

Clause 27: (Lumpsum provisions in tender) : Applicable

Clause 28: (Action where no specifications are specified) : Applicable

Clause 29 & 29A: (Withholding and lien in respect of sum due from contractor) : Applicable

Clause 31, 31A & 32: (Water supply) : Applicable

Clause 33: (Return of surplus materials) : Applicable

Clause 34: (Hire of plant & machinery) : Applicable

Clause 35: (Condition relating to use of asphaltic materials) : Applicable

Clause 36 (i): These are minimum requirement. If available, in addition to this may also be mentioned.

| Sl No | Minimum qualification of technical representative | Discipline | Number |
|-------|---|------------|--------|
| 1 | Graduate engineer | Civil | 1 |
| 2 | Graduate engineer | Electrical | 1 |
| 3 | Diploma engineer | Civil | 1 |
| 4 | Diploma engineer | Electrical | 1 |

Note: A retired assistant engineer from government service holding diploma will be treated at par with graduate engineers.

- Clause 37: (Levy/Taxes payable by contractor) : Applicable.
 Clause 38: Conditions for reimbursement of levy/taxes if levied after receipt of tender : Not applicable.
 Clause 39:(Termination of contract on death of contractor) : Applicable
 Clause 40:(If relative working in the department then contractor not allowed to tender) : Applicable
- Clause 41:(No gazetted engineer to work as contractor within one year of retirement) : Applicable
 Clause 43: Compensation during war situations : Not applicable

SPECIAL CONDITIONS FOR CONTRACTOR'S OWN DESIGN

- 1 The contractor shall use a computerized design software and design solar water pumping scheme for **Chithar** Village with the following given data:
 - a) Number of stage : 1 (Single)
 - b) Pumping hour : 6 hrs/day or less depending upon Lat-Long)
 - c) Ultimate water demand : 11 cum/day
 - d) Static head (Approx) : 300 m
 - e) Size of pumping main : 40 mm Ø. GI pipe
 - f) Length of pumping main : 2000 Rm
 - g) No. of Pump set : 2 No (1 No running & 1 No Standby)
- 2 The designed output data shall be submitted with all designed parameters along with the tender document. The tenderer shall submit comments/notes on the design methodology stating the feasibility for the project.
- 3 The comments/notes on design will be checked by the engineer-in-charge of the department and the tender will be accepted and work order will be issued by the competent authority only after verification and accepted by competent authority that the design submitted fulfill the requirements of the scheme.
- 4 The contractor shall submit three copies of detailed design and drawing of the architectural, structure, piping works and hydraulics within 10 days of acceptance of tender.
- 5 The design engineer will be required to attend the office of engineer-in-charge for preliminary discussion for scrutiny, remarks, etc. whenever required with all reference data, books, IS specification etc. at his own cost.
- 6 It will be binding on the design engineer of contractor to clarify, modify, redesign and drawings in accordance with scrutiny remarks made by the department within 5 (five) days of communication of remarks.
- 7 On approval of design, contractor shall supply free of cost eight (8) sets of design and drawing duly bound for use of the department. The contractor shall also furnish the sheet along with program of execution for completion of work within the time limit stipulated in the tender.
- 8 Security deposit of the tender shall be forfeited if he fails to modify his design as per scrutiny remarks within specified time after levy of compensations as per tender agreement.
- 9 Even though the design and drawing submitted by the contractor are approved by department, the contractor will not be relieved of his contractual obligations to hand over the structure in sound condition duly tested.
- 10 In case of any damage / failure either during construction testing or after commissioning, whether due to faulty design or defective construction all repairs or reconstruction of the structure shall have to be carried out by the contractor, entirely at his risk and cost.

GENERAL SPECIFICATIONS

- 1 Materials and methods of construction for all civil works shall be as per relevant Indian standard specification; part of which are incorporated in the standard specification of PHED and MPWD and all will be followed during the execution of the work. The work shall be executed as per the guidelines and provisions of B.I.S. All materials shall conform to Indian standard code of practice National Building Code and CPHEEO manual to maintain quality of work.
- 2 All materials to be used shall conform to the relevant specifications as per the latest version of the Indian Standards, unless otherwise stated in the detailed specifications of items of work. A set of specimen samples of all approved materials shall be kept in bottle or otherwise at site, cost of which is to be borne by the contractor.
- 3 Water required for the execution of the work and for the water tightness test of water retaining structure shall be supplied by the contractor at his own cost in satisfactory manner to the engineer-in-charge of work.
- 4 The source from which sand is to be obtained shall be subjected to the approval of engineer-in-charge. The sand shall be clean, sharp and gritty to touch and be freed from earth and other impurities by washing. The sand shall be washed to such a degree that when a handful is mixed with clean water in a glass and allowed to stand for an hour the precipitate of mud over the sand shall not exceed 5%.
- 5 **Cement mortar**

The mortar shall consist of cement and sand mixed in proportion defined in relevant schedule item for various item of work. Only measured quantity shall be used. The sand shall be shoveled in a wooden measure of a clean masonry platform, after removing the measure box and spreading out sand if necessary, the cement (in required proportion) shall be emptied on the top of sand.

The sand and cement shall be then turned over with shovels once dry and made into the form of a hollow cone; into this water can be poured and the whole shall then be turned over completely twice. The color and consistency shall at this stage be quite uniform, if not, further turning shall be done.

Water shall be added by measured quantities if the engineer so direct. Only such quantities of mortar shall be mixed at one time as can be used at once before it can set. No mortar, which has once caked or begun to set, shall be used, nor shall such mortar be remixed; but it shall be removed from the site of the work immediately.
- 6 **Cement concrete**

The concrete shall consist of an aggregate of the proportion by volume defined in relevant schedule item or work. Only measured quantity shall be used.
- 7 **Laying**

The cement, sand and stone chips shall be mixed properly in mechanical mixer in such a manner as to avoid loss of water. The concrete shall be mixed for minimum period of 2 minutes or unit it is of even colour and uniform consistency throughout. As soon as the concrete is mixed it should be removed to the work site with conveyor or pipe rapidly as practicable. The concrete laid will be vibrated for compaction by the vibrators. Slum test will be carried at site during execution of work.
- 8 **Curing**

The concrete laid shall not be disturbed and shall be kept thoroughly damped by means of wet matting and sand until it shall have become thoroughly set and hard enough to prevent its drying and cracking.

The aggregate shall consist of stone ballast of quality approved by engineer-in-charge and shall consist of graded size 20 mm and down wards as per specification or the size mentioned in the item description. Curing period for PCC shall be 14 days minimum. Use of curing compound shall be opted as per manufacturer's specification.

9 Cement Plaster

12 mm thick cement plaster in (1:3) proportion shall be applied on outside surface of all concrete works from 30 cm below ground level up to top. The surface in contact with water will have 15 mm thick cement plaster of not less than (1:3) proportion with 3% water proofing compound. The concrete surface shall be properly hacked, washed, cleaned and applied with thick cement slurry before applying. All brick work unless otherwise specified will be plastered externally and internally with 12mm cement plaster (1:3) proportion.

The plaster shall be protected from sun, rain and frost at the contractor's expense by such means as the engineer may approve.

To protect the plaster from the sun, ordinarily the whole surface shall be covered with wet sacks. The contractor shall keep the plaster continuously wet for a period of seven days after application.

10 Painting

All cement shall have two coats of synthetic enamel paint over a coat of priming as specified by the manufacture of the paint.

The make, shade and color of the paints shall have to be approved by the Engineer-in-charge before use.

11 Inspection

The contractor should get the pump and machineries, etc. inspected by authorized officer before installation. Materials will not be considered acceptable without inspection-cum-acceptance certificate of approved PHED inspection personnel.

12 Completion Drawings:

The contractor shall furnish, on completion of the work and handing over the same to the Department, three sets of print plans, showing the working detail of the several components, units of the plant and equipment.

SCOPE OF WORKS

1 Pre-sedimentation tank:

RCC rectangular pre-sedimentation tank will be constructed using RCC including inlet and outlet system. Walls will be supported by RCC buttresses. RCC balcony/walkway around the top of the tank walls with access stairs at inlet side and outlet side will be provided

2 Braced retaining wall to protect pre-sedimentation tank:

RCC braced retaining wall will be constructed to protect pre-sedimentation tank. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder.

3 Sump:

RCC rectangular sump of capacity 3,50,000 liter will be constructed. Walls will be supported by RCC buttresses.

4 Braced retaining wall to protect sump:

RCC braced retaining wall will be constructed to protect sump. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder.

5 Pump house:

RCC pump house will be constructed to accommodate one (1) diesel engine and clear water pump along with requisite accessories.

6 Drain for pump house:

Composite concrete-brick masonry side drain will be constructed around the pump house to convey excess water/rain water away from the site to natural drain.

7 Braced retaining walls 'A' and 'B' to protect pump house:

RCC braced retaining walls will be constructed at two places to protect pump house. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder.

DETAILED SPECIFICATIONS OF WORKS

1 Rectangular pre-sedimentation tank:

RCC pre-sedimentation tank with buttresses and the following parameters shall be provided :

| | |
|---------------------|---------|
| Inside length | = 60 m |
| Inside breadth | = 14 m |
| Inside depth (Mean) | = 3.9 m |

Inlets shall be designed to distribute the water equally and at uniform velocities. A baffle should be constructed across the basin close to the inlet and should project below the water surface to dissipate inlet velocities and provide uniform flow.

Outlet weir or submerged weir shall be designed to maintain velocities suitable for settling in the basin and to minimize short-circuiting. A baffle should be provided in front of the weir to stop the floating matter from escaping into the effluent.

RCC balcony/walkway for pre-settling tank with railings and posts will be constructed around the top wall of pre-sedimentation tank.

RCC approach stairs will be provided at inlet side and outlet side for access to balcony/walkway.

2 Braced retaining wall for pre-sedimentation tank:

RCC braced retaining wall will be constructed to protect pre-sedimentation tank. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder. It will be provided with the following parameters:

| | |
|---|------------------------------------|
| Length | = 74 m |
| Height at one end | = 6.5 m |
| Height at another end | = 9.5 m |
| Nos. of columns | = 21 nos |
| Size of columns | = 0.3 m x 0.3 m |
| Size of foundation footing | = 1.2 m x 1.2 m |
| Nos. of beams | = 80 nos |
| Length of beam (Average) | = 4 m each |
| Size of beams | = 0.3 m x 0.3 m |
| Thickness of regular stone masonry wall | = 0.3 m |
| Thickness of back filling with random stone boulder | = 0 .00 m at bottom - 1.9 m at top |

3 Rectangular sump:

RCC reservoir will be provided for storing pre-treated water.

| | |
|----------|------------------|
| Quantity | = 1 no |
| Capacity | = 3,50,000 litre |

Water reservoir shall have inlet channel/pipe connected with pre-sedimentation tank. Roof of the reservoir shall be of R.C.C. treated with two layers of tar felt over it and a layer of the tar painting in the ceiling. The roof of the reservoir will have sufficient opening with C.I. vent pipes and cowls.

There will be adequate number of ventilators suitably placed and provided with mosquito proof nettings. Proper surface drain shall be constructed around, which will ultimately be connected to the general drainage system.

The floor level is to be kept as high as possible in consistent with the pre-sedimentation tank outlet which feeds it. The reservoir bottom floor shall be provided with proper slope as to allow the entire water to be drained out at the time of its cleaning and washing.

Consideration of soil pressure from outside when reservoir is empty and up lift pressure of sub-soil water shall be taken into consideration in the design of the reservoir.

Lightning conductor shall be provided in the sump.

Thickness of the wall shall not be less than 215 mm and two layers of reinforcement shall be used and the design and construction shall be as per CPHEEO Manual and IS:3370.

Ladder made with flat iron 63 x 10 mm, 25 cm to 30 cm apart and rungs 45 cm wide, 20 mm dia iron ladder shall be constructed with 75 degrees to vertical at the floor.

All pipes and valves connected both in inlet and outlet shall be as per I. S. Specifications. Two manholes with cast iron cover shall be provided.

Outlet valve of suitable size and pressure shall be provided for pump suction line. The draw of water by outlet pipe should be placed 15 cm above the floor level to provide space for sedimentation. Suitable strainer shall be provided in the outlet pipe.

Scour pipe and valve will be provided at the bottom of the reservoir with sluice valve. The down pipe should have a gravity chamber at the bottom to prevent entry of rodents for scour valves. Water level indicator shall be provided.

4 Braced retaining wall for rectangular sump:

RCC braced retaining wall will be constructed to protect sump. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder. It will be provided with the following parameters:

| | |
|---|------------------------------------|
| Length | = 20 m |
| Height at one end | = 2.1 m |
| Height at another end | = 2.1 m |
| Nos. of columns | = 5 nos |
| Size of columns | = 0.4 m x 0.4 m |
| Size of foundation footing | = 1.0 m x 1.0 m |
| Nos. of beams | = 8 nos |
| Length of beam (Average) | = 5 m each |
| Size of beams | = 0.3 m x 0.3 m |
| Thickness of regular stone masonry wall | = 0.4 m at top – 1.2 m at bottom |
| Thickness of back filling with random stone boulder | = 0 .00 m at bottom – 0.6 m at top |

5 Pump house:

RCC framed structure will be constructed to accommodate pre-treated water pumps with operating equipments. It should have the following details:

| | |
|-------------|---|
| Quantity | = 1 no. |
| Plinth area | = 15 m x 10 m |
| Amenities | = Automatic sprinkler with alarm, lightning conductor, telephone conduit |
| Services | = Internal water supply system with storage tank, sanitary installation and internal electric installation. |

Pump house shall be of adequate size and shall be located at suitable place by the side of water sump; and shall be of adequate size to accommodate 2 units of pumping sets (1 set of diesel engine coupled pump at present and 1 set of electric motor coupled pump in future) of suitable capacity each.

They should also be capable of accommodating bus-bar channel, starter, O.C.B. sluice valves, reflux valves and flooring for electrical cables, concrete work for delivery pipe line, trench etc. for water pumping main in the pump houses and also supporting structures for cables and pipes.

The foundation and floor design of pump house should be done properly and due considerations for vibration should be given in its design. Further, the height of plinth of pump house above ground level shall not be less than 0.6 M.

The pump chamber shall be kept well lighted and ventilated with natural light and excess of air through long glass panels and window as per approved drawing. The front will have glass cover where needed and have fine architectural look. Toilet, wash basin, ceiling fan, etc shall be provided inside each pump house and every duty house by the contractor.

Following furniture, etc should be provided in each pump house:

| | |
|---|--------|
| a) Steel table with laminated plywood top of size 0.9 m X 1.5 | 2 Nos. |
| b) Steel chair with plastic netted base and rest | 5 Nos. |
| c) Steel cupboard (Full size) | 2 Nos. |
| d) Steel locker for employees with 12 lockers | 1 No. |
| e) Kitchen wares with complete set of utensils | 1 Unit |
| f) Wooden bed | 3 Nos. |
| g) Fire extinguisher | 3 Nos. |

All bricks masonry work should be in cement mortar with 1:3 and should be plastered with 1:3 on both the sides with smooth neat finish. The thickness of the plaster shall be 20 mm from one side and 12 mm on another side for all the brick masonry work. The inner surface of wall shall be painted with plastic emulsion paint and outer surface with snowcem.

All inside surface shall have three coats of painting of approved quality and shade. The front elevation and exterior finish of the building shall be designed aesthetically and architecturally. The exterior plastered walls should be painted with three coats of approved, quality and shade paint. All doors, (except central main door), windows and ventilators shall be of steel as per I.S.1038-1975 and I.S.1081-1960.

The position of windows and ventilators should be such that these will be opened outside and closed easily when necessary. The total shutter area of doors, windows and ventilators shall not be less than 30% of the floor area. All windows and doors on the outer walls shall be provided with 1.0 m wide RCC chajjas.

The central main external door shall be aluminium fully glazed as per I.S.1948-1961 and 1081-1960. The size shape and finish of the door shall be specially selected so as to improve the get-up of filter house. The entrance of the filter house shall preferably be in the form of foyer, with suitable porch in the front.

Sanitary block consisting of one Indian type water closet, wash basin, towel rail, mirror etc. shall be provided with all necessary pipe fittings as per the instruction of the Engineer-in-charge and one urinal and wash basin having a carpet area of 6 sq.m should be provided, in the first floor of the buildings. A septic tank with soak pit of suitable capacity shall also be provided at proper place for safe disposal

Space required for pumping system should be provided as follow:

(a) Sufficient space should be available in the pump house to accommodate the pump, engine, motor, valves, piping, control panels and cable trays in a rational manner with easy access and with sufficient space around each equipment for their maintenance and repairs.

The minimum space between two adjacent pumps/motors should be 0.6 meter for small and medium units and 1 meter for large units.

(b) Space for control panels should be planned as per the Indian Electric Rules (I.E), as per these rules:

(i) Clear space of not less than 915 mm in width shall be provided in front of switch-board, or as per the recommendation of the manufacturers with approval of the Engineer-in-charge.

(ii) The space behind the switch-board shall not be less than 230 mm or more than 750 mm in width measured from the farthest part of any attachment or conductor with approval from the Engineer-in-Charge.

(iii) If the switch-board exceeds 760 mm in width, there shall be a passage-way from either end of the switch-board with a clear height of 1,830 mm.

(c) Service bay should be provided in the pump house with a space that the largest equipment can be accommodated there for overhauling and repairs.

(d) A ramp or place for loading and unloading bay/space should be provided as per the decision of the Engineer-in-Charge/ Executive Engineer.

(e) Head room and material handling tackle/crane:

(i) In case of vertical pumps with hollow shaft motor, the clearance should be adequate to lift the motor clear off the face of the coupling or pump stool and carry the motor to the service bay without interference with any other equipments. The clearance should also be adequate to dismantle and lift the largest column assembly.

(ii) The travel of the lifting tackle/ crane should cover all bays and all equipments.

(iii) In the case of horizontal pump or vertical pump with solid shaft motor the head room should permit transport of the motor above the other equipments with adequate clearance.

(iv) The rated capacity of the lifting tackle/ crane should be adequate for the maximum weight to be handled at any time.

6 Drain around pump house:

Composite concrete-brick masonry side drain will be constructed around the pump house to convey excess water/rain water away from the site to natural drain. It shall have the following parameters:

| | |
|----------------------------|---------------------------------------|
| Length | = 54.5 m |
| Height of wall of drain | = 0.4 m (1:3 Brick masonry) |
| Thickness of wall of drain | = 0.1 m (1:3 Brick masonry) |
| Width of floor | = 0.6 m (1:2:4 Plain cement concrete) |
| Thickness of floor | = 0.1 m (1:2:4 Plain cement concrete) |

Plinth protection will be made with 1:2:4 PCC of 59 m length, 1 m width and 0.1 m thick between wall and drain to prevent seepage/entry of water inside the plinth.

7 Braced retaining wall 'A' for pump house:

RCC braced retaining wall 'A' will be constructed to protect pump house. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder. It will be provided with the following parameters:

| | |
|---|------------------------------------|
| Length | = 16 m |
| Height at one end | = 2.1 m |
| Height at another end | = 2.1 m |
| Nos. of columns | = 4 nos |
| Size of columns | = 0.4 m x 0.4 m |
| Size of foundation footing | = 1.0 m x 1.0 m |
| Nos. of beams | = 6 nos |
| Length of beam (Average) | = 5.33 m each |
| Size of beams | = 0.3 m x 0.3 m |
| Thickness of regular stone masonry wall | = 0.4 m at top – 1.2 m at bottom |
| Thickness of back filling with random stone boulder | = 0 .00 m at bottom – 0.3 m at top |

8 Braced retaining wall 'B' for pump house:

RCC braced retaining wall 'B' will be constructed to protect pump house. Columns and beams will be RCC and filler will be regular coursed rubble masonry and back filling with random stone boulder. It will be provided with the following parameters:

| | |
|--------|------|
| Length | = 7m |
|--------|------|

| | |
|---|-----------------------------------|
| Height at one end | = 2.1 m |
| Height at another end | = 2.1 m |
| Nos. of columns | = 3 nos |
| Size of columns | = 0.4 m x 0.4 m |
| Size of foundation footing | = 1.0 m x 1.0 m |
| Nos. of beams | = 4 nos |
| Length of beam (Average) | = 3.5 m each |
| Size of beams | = 0.3 m x 0.3 m |
| Thickness of regular stone masonry wall | = 0.4 m at top – 1.2 m at bottom |
| Thickness of back filling with random stone boulder | = 0.00 m at bottom – 0.3 m at top |

BILL OF QUANTITIES

| Sl. No. | Description of Items | Unit | Qty | Rate (in Rs.) |
|----------------|--|-------------|------------|----------------------|
| 1 | <p>Survey, design, supply, installation, testing & commissioning of solar water pumping system for Chithar village suitable for:</p> <p>1. Water demand = 11 cum/day 2. Static head (Approx) = 300 m 3. Pumping main = 40 mm GI 4. Length of pumping main = 2000 Rm 5. No. of pump set = 2 Nos (1 No Running & 1 No Standby)</p> <p>Including the following items :</p> <p>1. PCC flooring under solar panel 2. Solar power plant 3. Control system 4. Security lighting 5. Power supply for lighting 6. Security fencing for SPV 7. Power cable from SPV to pump</p> | Job | 1 | 31,00,000.00 |
| 2 | (a) Earth work for approach road to pump house | | | 0.00 |
| | (b) Earth work for site for solar plant | | | 0.00 |
| 3 | Construction of intake weir | | | 0.00 |
| 4 | Construction of RCC Sump-I *****litres capacity | | | 0.00 |
| 5 | Construction of RCC Sump-II *****litres capacity | | | 0.00 |
| TOTAL | | | | 31,00,000.00 |

(Rupees Thirty one Lakh) only.

SCHEDULE OF QUANTITIES

Quoted rate should be both in figure and words.

| Sl. No | Description of Items | Unit | Qty | Quoted Rate (in Rs.) | Quoted Rate (in word) | Amount (in Rs.) |
|--------------|--|------|-----|----------------------|-----------------------|-----------------|
| 1 | Survey, design, supply, installation, testing & commissioning of solar water pumping system (working+standby) for Chithar Village suitable for: (1) Water demand = 11 cum/day (2) Static head (Approx) = 300 m (3) Pumping main = 40 mm GI (4) Length of pumping main = 2000 Rm (5) No of Pump set = 2Nos (1no running & 1no Standby) Including the following items: (1) PCC flooring under solar panel (2) Solar power plant (3) Control system (4) Security lighting system (5) Power supply for lighting (6) Security fencing for SPV (7) Power cables from SPV to pump | Job | 1 | | | |
| 2 | (a) Earth work for approach road to pumping station | Job | 1 | | | |
| | (b) Earth work for site for solar plant | Job | 1 | | | |
| 3 | Construction of weir | Job | 1 | | | |
| 4 | Construction of RCC Sump-I *****litres capacity | Job | 1 | | | |
| 5 | Construction of RCC Sump-II *****litres | Job | 1 | | | |
| TOTAL | | | | | | |

Rupees (.....) only

QUALIFICATION INFORMATION

The information to be filled in by the bidder in the following pages will be used for purposes of post qualification. This information will not be incorporated in the contract.

1 Qualification Information of the Bidder

Constitution or legal status of bidder :

[If any attach copy]

Place of registration :

Principal place of business :

Power of attorney of signatory of bid :

[Attach copy]

2 Experience in works of similar nature

Work performed as prime contractor and work performed in the past as a nominated sub-contractor will also be considered provided the sub-contract was involved in execution of all main items of work described in the bid document, provided further that all other qualification criteria are satisfied (in the same name) on works of similar nature over the last five years (immediately preceding the financial year in which bids are received). Authenticated Completion Certificate from competent authority may be enclosed for reference.

| Project name | Name of employer | Description of work | Contract No | Value of contract (Rs in lakh) | Date of issue of work order | Stipulated period of completion | Actual date of completion | Remarks explaining reasons for delay |
|--------------|------------------|---------------------|-------------|--------------------------------|-----------------------------|---------------------------------|---------------------------|--------------------------------------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

3 Availability of key contractor's equipment essential for carrying out the works. The bidder should list all the information requested below.

| Item of equipment | Requirement | | Availability proposal | Remarks |
|-------------------|-------------|----------|-----------------------|----------------------|
| | No | Capacity | Owned/leased | Supporting documents |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

- 4 Qualification and experience of key personnel for administration and execution of contract work and also for maintenance.

| Name | Contact number | Qualification | Year of experience in general work | Year of experience in similar work with supporting documents |
|------|----------------|---------------|------------------------------------|--|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

- 5 Proposed sub-contracts and firms involved.

| Sanction of the work | Value of sub-contract | Sub-contractor (Name & address) | Experience in similar works |
|----------------------|-----------------------|---------------------------------|-----------------------------|
| | | | |
| | | | |
| | | | |
| | | | |

- 6 Financial reports for the last 3 (three) years : Balance sheets, profit and loss statements, auditors reports, etc. List them below and attach copies

| Financial Information | Historical information for the last 3 years from _____ to _____ | | | |
|-----------------------|---|------|------|---------|
| | Yr 1 | Yr 2 | Yr 3 | Average |
| Total assets | | | | |
| Total liabilities | | | | |
| Net worth | | | | |
| Current asset | | | | |
| Current liabilities | | | | |

7 Information on litigation history in which the bidder is involved

| Other parties | Employer | Cause of dispute | Amount involved | Remarks (present status) |
|---------------|----------|------------------|-----------------|--------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

8 Proposed work method and schedule. The bidder should attach design, drawings and charts as necessary to comply with the requirements of bidding documents.

POWER OF ATTORNEY FOR SIGNING OF BID

Know all men by these presents, We..... (name of the Bidder/Firm and address of the registered office) do hereby irrevocably constitute, nominate, appoint and authorize Mr./ Ms (name), son/daughter/wife of..... and presently residing at....., who is presently employed with us as our true and lawful attorney (hereinafter referred to as the "Attorney") to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our BID(s) for the _____ [name of Work] proposed by the _____ (name of Department) including but not limited to signing and submission of all BIDs, and other documents and writings, participate in conferences/ meetings and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts and undertakings consequent to acceptance of our bid[s], and generally dealing with the Authority in all matters in connection with or relating to or arising out of our bid for the said Work[s] and/ or upon award thereof to us and/or till the entering into of the contract with the Authority.

AND we hereby agree to ratify and confirm and do hereby ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Attorney pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Attorney in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

In witness whereof we,, the above named principal have executed this power of attorney on this day of.... 2

For
(Signature)
(Name, Title and Address)

Witnesses:

- 1.
- 2.

.....
(Signature)
(Name, Title and Address of the Attorney)

(Notarised)

Person identified by me/ personally appeared before me/
signed before me/ Attested/ Authenticated*

(*Notary to specify as applicable)

(Signature, Name and Address of the Notary)

Seal of the Notary

Registration Number of the Notary

Date: _____

Notes: 1. The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required, the same should be under common seal affixed in accordance with the required procedure.

1. *Also, wherever required, the BIDDERS should submit for verification the extract of the charter documents and documents such as a resolution/ power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the BIDDERS.*

BID SECURITY DECLARATION FORM

(The Bidder shall complete in this form in accordance with the instructions indicated)

Date :(insert date as day, month and year) of bid submission

Tender No.....

To:

We/I, the undersigned, declare that:-

1 We/I understand that, according to your conditions, bids must be supported by a Bid Security Declaration.

2 We/I accept that we will automatically be suspended from being eligible for bidding in any contract under your department for a period of 2 (two) years upon receipt of your blacklisting order, if i/we are in breach of our obligation(s) under the bid conditions, because i/we:-

- a) withdraw our bid during the period of bid validity specified or
- b) having been notified of the acceptance of our bid by the purchaser during the period of bid validity,
 - i) fail or refuse to execute the contract, if required, or
 - ii) fail or refuse to furnish the performance guarantee

3 I/we understand that this Bid Security Declaration shall expire if we are not the successful bidder, upon the earlier of

- i) our receipt of a copy of your notification of the name of successful bidder, or
- ii) twenty-eight days after the expiration of our tender

Signed:

Name:

Date :

(To be written in the Company's Letterhead)

CERTIFICATE OF UNDERSTANDING

Bid No. : -----

Name of work : ----- WSS

To:

.....(Employer)

..... (Address)

Dear Sir,

We, <Name of manufacturer>, are official manufacturer/dealer of <Name of Product> having factories atThe machinery tendered by <name of Bidder> is manufactured by us and is within our range of production.

We further affirm that we are willing to sell our product to <name of bidder> and shall extend support in installation, testing and commissioning at site including supports in after sales services as deemed necessary.

Signed

Name.....

Designation.....

Seal.....