

## **TERMS OF REFERENCE (DESIGN and BUILD)**

For the

### **REPAIR/UPGRADING OF SEWAGE TREATMENT PLANT**

#### **1.0 PROJECT INFORMATION**

##### **1.1 Contractual Framework**

The contractual arrangement to be used for the project is the Design and Build Scheme. Under this scheme the procuring entity awards a single contract for the engineering and construction to a single firm, partnership, corporation, joint venture or consortium.

##### **1.2 Minimum Qualifications of Proponent**

The eligibility requirements shall comply with the BAYANIHAN 2.

#### **2.0 SCOPE OF THE CONTRACT**

##### **2.1 Obligation of the Contractor**

- a. Undertake Detailed Engineering Design (DED) including Detailed Design Estimate (DDE) with corresponding Detailed Unit Cost Analysis (DUCA) per item subject to evaluation and acceptability of EAMC.
- b. The project shall be constructed according to the DED prepared by the winning Bidder and approved by the EAMC, and in compliance with the Minimum Performance Specifications and Parameters.

The following works and other incidentals shall undertaken as described hereunder:

1. The contractor shall ensure that its firsthand information on the campus site development plan, construction data of existing buildings, soil survey report and other readily available from the owner. Such will be used to define project design criteria and serve as basis for any changed conditions and establish project cost estimate. Should any of these data and other pertinent data be unavailable, the Contractor shall carry out the needed testing/investigation to complete the needed design data.
- c. The contractor shall be held liable for the design defects and/or failure of the completed project within the warranty period specified in Section 62.2 of the revised IRR-A of RA 9184.
- d. Coordinate with the different utility providers and/or concerned agencies with regards to the existing utility lines such as electrical lines, telephone line, water pipeline and all other utilities affected by the Project. The contractor shall be responsible for the retrieval and/or turnover of all salvageable materials.
- e. All defective pumps and other salvage materials with value shall be turned over to EAMC.

## **2.2 Obligation of the EAMC**

- a. Approve the contractor's design without diminishing the Contractor's full and sole responsibility for the quality and integrity thereof.
- b. Supervise and monitor the implementation of the project.
- c. Pay the accomplishment accepted in conformance with the minimum performance specification included under the Design and Build Contract.

## **2.3 Contract Terms of Reference**

The Standard Bidding Documents in the approved Government Procurement Policy Board (GPPB), Latest Edition including Form of Contract, shall be used, with appropriate modifications to incorporate pertinent provisions of Annex "G" of the Revised IRR of RA 9184.

## **3.0 CONCEPTUAL DESIGN**

The proposed project shall have two (2) main phases: the design and the construction phase.

The design phase shall include conducting evaluation of the site, which will form the basis of the proposed REPAIR/UPGRADING OF SEWAGE TREATMENT PLANT.

The project shall serve the following.

1. To connect all septic tank to the sewage treatment plant.
2. To improved the functions of the existing Sewage Treatment Plant in compliance with the latest regulatory requirements of DENR and other regulating agencies.

## **PROJECT SITE**

### **1. General**

The existing Sewage Treatment Plant is to be located between the CERID building and the PTAHC building.

### **2. Preliminary documents to be provided by the Owner**

The following documents will be provided by the Owner as preliminary data for the project:

- a. Campus site development plan; and
- b. Schematic/As-built plan of STP

## **PROJECT DEFINITION**

The Owner/Procuring Entity does not guarantee that the preliminary data provided are fully correct, up to date and applicable to the project. The Contractor shall solely be responsible for the accuracy and applicability of all data that it will use in its Design and Build proposal and services. It shall also be responsible for the integrity of the detailed engineering design and the performance, irrespective of the approval of the Owner/Procuring Entity. It

shall also be solely responsible for the design and liable for the defects and/or failures of the completed project.

### **GENERAL CODE AND STANDARDS**

The design and specifications shall conform to, but not limited to the following standards set by the:

- a. Uniform Plumbing Code of the Philippines;
- b. Updated DENR Regulations; and
- c. Applicable Local Regulations and Ordinances.

### **SCOPE OF WORK**

The Contractor is required to perform the following scope of works:

#### 1. Review of Existing Information

Review the basic design parameters and detailed scope of works. The contractor shall ensure that it is firsthand information on the site development plan, construction data of existing buildings, soil survey report and other documents that are readily available from the Owner. Such will be used to define project design criteria and serve as the basis for any changed conditions and establish project cost estimates. Should any of these data and other pertinent data be unavailable, the Contractor shall carry out the needed testing/investigation to complete the needed design data.

#### 2. Field Survey and Site Inspection

The contractor shall conduct the appropriate site survey and investigation of the proposed project.

#### 3. Minimum Materials and Equipment Requirements

The contractor shall provide brand new pumps for all lift station located at septic tanks. Newly constructed septic vault for MOLECULAR LABORATORY shall also be provided with transfer pumps. All submersible pumps at the STP shall be replace with brand new including hose and other connections that provide the STP to be operational.

#### 4. Permits

The Contractor shall process and secure all the necessary permits as required by the authorities for the preparation, execution and upon completion of the contract. The Contractor shall coordinate with other agencies and pay the corresponding fees incidental to the acquisition of the requirements.

5. Chipping of concrete and excavation.
6. Checking of all existing pipe connection from septic tank to STP.
7. Replacement of existing pipe connection, if damage.
8. Pull-out of defective pumps from its locations.
9. Replacement of defective pumps with brand new units including hose and connectors.
10. Repair/replacement of wires and cables for pumps located at every lift stations.
11. Breakers/panel boards at every lift station shall be replace with brand new units.
12. Control Panel:

Defective parts of control panel shall be replaced with brand new parts including accessories and other materials needed for the fully operation of the system.

13. All new septic that are not connected shall be tapped to the STP.
14. The project shall be properly commissioned/operational/rendered ready for use upon completion or turned over by the Contractor.
15. Test shall be performed for effluent and it shall be in accordance with the latest regulatory requirements by DENR or other regulating bodies.
16. Restoration

The Contractor shall be responsible for the restoration of all affected area during construction.

The Contractor shall perform the following activities but is not limited to the following:

a. Mobilization/Demobilization

The Contractor shall mobilize and bring out into work, all personnel, plant and equipment, in accordance with his approved construction program, equipment moving and utilization schedule and manpower schedule, from its regular business to the site to undertake the contract.

Mobilization shall include the obtaining and transporting to jobsite of equipment, materials, tools, personnel, constructional plant and all necessary items for the execution and completion of the work and shall also include the setting up and verification of all equipment and instruments until it is rendered operable.

Demobilization shall include dismantlement and removal from the site of the Contractor's materials and equipment and all temporary facilities. It shall also include a clean-up of the site after completion of the contract as well as transportation from the site of the contractor's personnel.

b. Site Clearing and Proper waste disposal

General site clearing operations include the removal of demolished materials and objectionable matter, protection of existing structures/facilities left functional and clearing to allow for new construction.

The Contractor obliged to provide barricades, coverings, or other types of protection necessary to prevent damage to existing structures and facilities. Likewise, he is to dispose of materials, trash and debris in a safe and acceptable manner in accordance with applicable laws and ordinances. Burying and burning of trash and debris at the site will not be permitted. Trash and debris shall be removed from the site at regular intervals to prevent from accumulating and ultimately delaying the course of the work.

## DESIGN AND CONSTRUCTION SCHEDULE

The project shall be carried out within the duration herein specified:

- A. Design Phase, which shall include the Detailed Engineering, including presentation and approval as well as Permit Acquisitions --- forty five (45) calendar days; and
- B. Construction Phase, which encompasses all works stipulated in the TOR as well as post construction evaluation --- one hundred and twenty (150) calendar days

The Total Project Duration is one hundred ninety five (195) calendar days.

## SELECTION OF DESIGN AND BUILD CONTRACTOR

The procurement and implementation of the project using the "Design and Build" schem shall be in accordance with the provisions of BAYANIHAN 2. Bidding/Negotiation shall be conducted by the Bids and Awards Committee constituted to conduct the procurement of the project. The Technical Working Group (TWG) shall likewise assist the Bids and Awards Committee in the evaluation of technical proposals in accordance with the criteria set. The TWG shall likewise supervise the overall project implementation.

### 1. Eligibility Requirements

- 1.1 The eligibility requirements for Design and Build infrastructure projects shall comply with the applicable provisions set forth in RA 9184.
- 1.2 A modified set of requirements integrating the eligibilty documents and criteria for the design and build infrastructure projects shall adopted as follows:
  - 1.2.1 Class A documents (Legal, Technical and Financial Documents) and Class B documents.
    - a. Relevant statements of all on-going, completed, awarded but not yet started design and build related contracts, curriculum vitae of key staff, partners or principal officers; and
    - b. Valid licenses issued by the Professional Regulation Commission (PRC) for the design proposal.
    - c. PCAB License: **Small B, Category C & D**
  - 1.2.2 Eligibility Criteria
    - a. The eligibilty of design and build contractors shall be based on the legal, technical and financial requirements. In the technical requirements, the design and build contractor should be able to comply with the experience requirements under the IRR of RA 9184, where one of the parties (in a joint venture/consortia) should have atleast one similar contract, both in design and construction, with atleast 50% of the cost of the Approved Budget for the Contract (ABC).
    - b. The relevant provisions stipulated in the IRR of RA 9184 on eligibility requirements shall be observed.

## 2. *Submission and Receipt of Bids*

- 2.1 The technical proposal shall be comprised of all the required documents for infrastructure projects and the following additional documents:

2.1.1 Schematic Documents

The schematic documents shall be a take-off from the approved design brief. These documents shall be scaled presentation drawings comprising, but not limited to, perspectives, site development plans, elevations, sections and other necessary drawings to illustrate the size and character of the project. Also included in the presentation drawings is the proposed design and construction system for consideration. They shall be submitted drawings on 20" x 30" paper using the appropriate scale. Similarly, it should also include a PERT-CPM, an outline of specifications, illustrating the size and character of the project, and showing the kinds of materials to be used, including other items of work that are indicated in the Terms Of Reference and design Brief.

2.1.2 Design and Construction Methods

Emphasis shall be made on the construction methods that best fits the cost and duration of the project. Pre-fabricated and/or modular construction systems, with a proven track record and history of past project, may only be accepted after passing a thorough evaluation.

2.1.3 Value Engineering Analysis of Design and Construction Method

Prospective bidders shall prepare a value engineering analysis report of their proposed design and construction method to be applied for the Project.

- 2.1.4 List of design and construction personnel, to be assigned to the contract to be bid, with their complete qualifications and experiences.

### **MINIMUM REQUIREMENTS FOR A CONSTRUCTION SAFETY AND HEALTH PROGRAM**

Every construction project shall have a suitable Construction Safety and Health Program, which must be in accordance with the rules, and other orders and issues issued by the DOLE, the Construction-in-Charge, or an responsible officer, shall be responsible for the compliance of the Program.

### **MINIMUM STAFF REQUIREMENTS**

The Contractor shall provide adequate and qualified staff to perform the services required herein. The key personnel and the respective qualifications of the **DESIGN PERSONNEL** shall as follows:

1. SANITARY ENGINEER

The Sanitary Engineer must be a duly licensed with at least five (5) years of experience in structural design in similar and comparable projects.

2. ELECTRICAL ENGINEER

The Electrical Engineer must be a duly licensed with at least five (5) years experience in similar and comparable projects.

3. MECHANICAL ENGINEER

The Mechanical Engineer must be a duly licensed with at least five (5) years experience in similar and comparable projects.

The key professionals and the respective qualifications of the **CONSTRUCTION PERSONNEL** shall be follows:

1. PROJECT MANAGER

The project manager shall be a licensed civil engineer and a practicing geotechnical engineer with at least ten (10) years of relevant experience in projects involving slope stabilization and protection and other similar or comparable projects in different locations. The project manager should have a proven record of managerial capability through the directing/managing of major civil engineering works, including project of a similar magnitude.

2. PROJECT ENGINEER

The project engineer shall be a licensed sanitary engineer with at least five (5) years experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

3. ELECTRICAL ENGINEER

The electrical engineer must be a duly-licensed with at least five (5) years experience in the similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

4. MECHANICAL ENGINEER

The mechanical engineer must be a duly-licensed with at least five (5) years experience in the similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

5. FOREMAN

The foreman must have at least five (5) years experience in bridge construction projects of other similar and comparable projects and shall be preferably knowledgeable in the application of rapid construction technologies.

6. SAFETY OFFICER

The safety officer must be an accredited safety practitioner by the department of labor and employment (DOLE) and must have undergone the prescribed forty (40) hour construction safety and health training (COSH).

The above key personnel listed are required. The DBC (Design & Build Contractor) may, as needed and at its own expense, an additional professionals and/or support personnel for the optimal performance of all construction services, as stipulated in these terms of reference, for the project.

Prospective bidders shall attach each individual's resumé, PRC license of the professional staff, certificates of training and other pertinent documents proving the said professional's expertise.

### **SUBMITTALS, STAGES AND DELIVERY**

The following submittals and accomplished documents shall be duly completed and turn-over by the Design-And-Build contractor for the project:

1. For the Design Phase
  - a. Technical specifications;
  - b. Detailed cost estimate; and
  - c. Bill of quantities.
2. For the Construction Phase
  - a. As-built plans;
  - b. All necessary plans
  - c. shop drawings, if applicable;
  - d. Test results; and
  - e. Guarantees, warranties and other certificates

### **INSTALLATION AND WORKMANSHIP**

1. Any errors, omissions, inconsistencies, inadequacies or failure submitted by the design and build contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the design and build contractor's cost. If the design and build contractor wishes to modify any design or document which has been previously submitted, reviewed and approved, the design and build contractor shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.

### **WARRANTIES OF THE DESIGNER / BUILDER**

1. The designer builder warrants that shall conform strictly with the terms and conditions of these Terms of Reference.
2. The designer /builder warrants, represents and undertakes reliability of the service and that their manpower complements are hardworking, qualified/reliable and dedicated to do service required to the satisfaction of the **EAMC**. It shall employ well behaved and honest employees with ID's displayed conspicuously while orkin within the compound. It shall not employ EAMC employees to work in any category whatsoever.

3. The designer /builder shall comply with the laws governing employees compensation, Philhealth, Social Security and/ or labor standards and other laws, rules and regulations applicable to its personnel employed by the designer builder on account of contracted services. The designer builder shall pay its personnel not less than the minimum wage and other benefits mandated by law.
4. The designer /builder in performance of its services shall secure, maintain at its own expense all registration, licenses or permits required by National or Local Laws and shall comply the rules, regulations and directives of regulatory authorities and commissions. The designer builder undertakes to pay all fees or charges payable to any instrumentality of government or to any other duly constituted authority relating to the construction project.
5. The designer /builder's personnel shall take all necessary precautions for the safety of all persons and properties at or near their area of work and shall comply with all the standard and stablished safety regulations, rules and practices.
6. The designer /builder shall coordinate with the EAMC engineers and or any of his authorized representative in the preformance of their job.
7. The designer /builder shall be liable for any loss, damage, or injury as may be due directly through the fault or negligence of its personnel. It shall assume responsibility thereof and the EAMC shall be specifically released from any responsibility arising therefrom.
8. The designer /builder shall neither assign,transfer,pledge any part or interest therein; however, sub contracting may be allowed provided that tha main contractor shall be responsible for the full compliance of all applicable provisions of its TOR by the sun contractor.

**APPROVED BUDGET FOR THE CONTRACT (ABC)**

Four Million Pesos (PhP. 4,000,000.00)