PHILIPPINE BIDDING DOCUMENTS

(Procurement of INFRASTRUCTURE PROJECT)

Design and Build of 300 CMD Sewage Treatment Plant (STP) for Pampanga Economic Zone (PEZ) (PEZA HO 2022-02)

Government of the Republic of the Philippines

Sixth Edition
July 2020

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the "Works") through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv)the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

PHILIPPINE ECONOMIC ZONE AUTHORITY

Invitation to Bid for the Design and Build of 300 CMD Sewage Treatment Plant (STP) for Pampanga Economic Zone (PEZA-HO-2022-02)

1. The **Philippine Economic Zone Authority**, through the **Corporate Budget for Year 2022** intends to apply the sum of **Twenty-Five Million Pesos (PhP25,000,000.00)** being the Approved Budget for the Contract (ABC) to payments under the contract for the **Design and Build of the 300 CMD Sewage Treatment Plant (STP) for Pampanga Economic Zone (PEZA HO 2022-02)**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The *Philippine Economic Zone Authority* now invites bids for the above Procurement Project. Completion of the Works is required *within 180 Calendar Days*. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

4. Interested bidders may obtain further information from *Philippine Economic Zone Authority* and inspect the Bidding Documents at the address given below from office hours from Mondays to Fridays, 9:00 AM to 4:00 PM.

5. A complete set of Bidding Documents may be acquired by interested bidders on 22 February 2022 from given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Twenty-Five Thousand Pesos (₱25,000.00). The Procuring Entity shall allow the bidder to present its proof of payment for the fees.

6. The *Philippine Economic Zone Authority* will hold a Pre-Bid Conference on **02 March 2022, 10AM** 8th Floor, Double Dragon Center West Building, DD Meridian Park, Macapagal Avenue, Pasay City **and/or through videoconferencing/webcasting *via* Microsoft Teams**, which shall be open to prospective bidders.

   Interested bidders shall inform the PEZA-BAC, through its Secretariat, by sending an email at **bacsec@peza.gov.ph**, of their intention to participate in the Pre-Bid Conference at least one (1) day prior to the date of the conference.

   The Pre-Bid Conference will be conducted online to be able to observe social distancing.

7. Hard copies and soft copies of bids (1 original, 1 copy and a soft copy in USB) must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before **10AM, 14 March 2022**. Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.

9. Bid opening shall be on **11AM, 14 March 2022** at the **8th Floor, Double Dragon Center West Building, DD Meridian Park, Macapagal Avenue, Pasay City** and through video conferencing or webcasting via Microsoft Teams to observe social distancing. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

10. The schedule for bidding activities is as follows:

Activity	Schedule
Posting of Invitation to Bid	22 February 2022
Issuance and Availability of Bid Documents	22 February 2022 - 14 March 2022
Pre-Bid Conference	10AM 02 March 2022
Deadline for Submission of bids	10AM 14 March 2022
Opening of Bids	11AM 14 March 2022

11. The **Philippine Economic Zone Authority** reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

12. For further information, please refer to:

    Philippine Economic Zone Authority
    Bids and Awards Committee (BAC) Secretariat
    10th Floor, Double Dragon Center West Bldg., DD Meridian Park, Macapagal Avenue
    Pasay City
    Email: bacsec@peza.gov.ph
    Tel. No. 85513429/39; 8551-3451 local 200
    www.peza.gov.ph

13. You may visit the following websites:

    For downloading of Bidding Documents:
    http://www.peza.gov.ph/index.php/bid-opportunities

22 February 2022

(Sgd.)
DDG TERESO O. PANGA
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, *Philippine Economic Zone Authority* invites Bids for the **Design and Build of 300 CMD Sewage Treatment Plant (STP) for Pampanga Economic Zone**, with Project Identification Number **(PEZA HO 2022-02)**.

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for *Corporate Budget for Year 2022* in the amount of ₱25*,000,000.00.*

2.2. The source of funding is the Corporate Operating Budget.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

a. Subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address *8th Floor, Double Dragon Center West Bldg., DD Meridian Park, Macapagal Avenue, Pasay City* and/or through videoconferencing/webcasting via MSTeams as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the

Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. *Payment of the contract price shall be made in* Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid for *120 calendar days* from date of opening of bids. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB.**

18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

<table>
<tr><th>ITB Clause</th><th></th></tr>
<tr><td>5.2</td><td>For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:
Design and Build/Construction of Wastewater Treatment Facilities/Plant and/or Sewage Treatment Facilities/Plant.</td></tr>
<tr><td>7.1</td><td>Subcontracting is not allowed.</td></tr>
<tr><td>10.3</td><td>[Specify if another Contractor license or permit is required.]</td></tr>
<tr><td>10.4</td><td>The key personnel must meet the required minimum years of experience set below:
Design Stage
<table>
<tr><th>Key Personnel</th><th>General Experience</th><th>Relevant Experience</th></tr>
<tr><td>Design Architect</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Structural Engineer</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Electrical Engineer</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Mechanical Engineer</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Draftsman</td><td>1 year</td><td>1 year</td></tr>
</table>
Construction Stage
<table>
<tr><th>Key Personnel</th><th>General Experience</th><th>Relevant Experience</th></tr>
<tr><td>Project Manager</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Safety Officer</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Quality Controller</td><td>3 years</td><td>1 year</td></tr>
<tr><td>Quality Surveyor / Cost Analyst</td><td>3 years</td><td>2 years</td></tr>
<tr><td>Foreman</td><td>10 years</td><td>5 years</td></tr>
<tr><td>Draftsman</td><td>1 year</td><td>1 year</td></tr>
<tr><td>Skilled Worker</td><td>5 years</td><td>3 years</td></tr>
<tr><td>Helper</td><td>1 year</td><td>1 year</td></tr>
</table></td></tr>
<tr><td>10.5</td><td>The minimum major equipment requirements are the following:

<table>
<tr><th>Equipment</th><th>Capacity</th><th>Number of Units</th></tr>
<tr><td>Mini-dump truck</td><td></td><td>One (1) unit</td></tr>
<tr><td>Welding machine at least 500 Amps.</td><td></td><td>One (1) unit</td></tr>
<tr><td>Mortar Mixer</td><td></td><td>One (1) unit</td></tr>
<tr><td>Jackhammer</td><td></td><td>Two (2) units</td></tr>
<tr><td>Generator set</td><td></td><td>One (1) unit</td></tr>
<tr><td>Excavator</td><td></td><td>One (1) unit</td></tr>
<tr><td>Concrete Vibrator</td><td></td><td>One (1) unit</td></tr>
<tr><td>Mechanical Bar Bender & Cutter</td><td></td><td>One (1) unit</td></tr>
<tr><td>Gas cutting outfit</td><td></td><td>One (1) unit</td></tr>
<tr><td>Generator, 75 kVA</td><td></td><td>One (1) unit</td></tr>
<tr><td>Submersible Pumps</td><td></td><td>One (1) unit</td></tr>
<tr><td>Total Station Surveying Equipment</td><td></td><td>One (1) unit</td></tr>
</table></td></tr>
</table>

12	*Alternative bid is not allowed.*
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than Five Hundred Thousand Pesos (₱500,000.00) if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than One Million Two Hundred Fifty Thousand Pesos (₱1,250,000.00) if bid security is in Surety Bond.
19.2	Partial Bids are not allowed
20	*[List licenses and permits relevant to the Project and the corresponding law requiring it, e.g. Environmental Compliance Certificate, Certification that the project site is not within a geohazard zone, etc.]* a. Building Permit and other Ancillary Permits b. Fire Safety Evaluation Clearance c. Fire Safety Inspection Certificate d. All other permits as may be required for the construction e. Environmental Compliance Certificate f. Discharge Permit g. Certificate of Occupancy
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the DOLE, and other acceptable tools of project scheduling.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC,** which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

15.1. If required, the Contractor will provide “as built” Drawings and/or operating and maintenance manuals as specified in the **SCC.**

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity’s Representative’s approval, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	*[If different dates are specified for completion of the Works by section, i.e. "sectional completion," these dates should be listed here.]*
4.1	*[Specify the schedule of delivery of the possession of the site to the Contractor, whether full or in part.]* 180 Calendar Days upon signing of Contract.
6	The site investigation reports are: *[list here the required site investigation reports.]*
7.2	*[In case of permanent structures, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures:]* Fifteen (15) years.
10	a. Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within **14 days** of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is 5% of the original contract price.
13	The amount of the advance payment is *[insert amount as percentage of the contract price that shall not exceed 15% of the total contract price and schedule of payment]*.
14	*[If allowed by the Procuring Entity, state:]* Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	The date by which operating and maintenance manuals are required **5** days before completion. The date by which "as built" drawings are required is **5** days before completion.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is whichever is specified in the Contract.

Section VI. Specifications

TERMS OF REFERENCE

For the Proposed Design and Build of 300 CMD Sewage Treatment Plant for Pampanga Economic Zone

I. PROJECT DESCRIPTION

Project Name:	**Proposed Design and Build of 300 CMD Sewage Treatment Plant for Pampanga Economic Zone**
Locations:	**Pampanga Economic Zone (PEZ, Pulung Cacutud, Angeles City, Pampanga**
Approved Budget for the Contract (ABC):	**Php 25,000,000.00**
Project Duration:	**180 Calendar Days**

II. STATEMENT OF THE PURPOSE

This contract is designated as a DESIGN AND BUILD OF 300 CMD SEWAGE TREATMENT PLANT for PAMPANGA ECONOMIC ZONE. This work package is for the complete design and construction of 100 m3/d sewage volume and the effluent quality of the centralized STP shall comply with DENR AO 2016-08 requirement for Class C waters and DAO 2021 – 19 Updated Water Quality Guidelines and General Effluent Standards for Selected Parameters. Prior to entering the centralized STP, waste generated from industrial plants of the Pampanga Economic Zone locators will be pre-treated to meet the influent standards based on the proposed design of the STP.

The Works shall be designed, constructed, installed, and commissioned to treat the incoming influent to the required effluent quality described in this document, whereas maximizing the ease of operation and maintenance and minimizing operational and maintenance costs.

III. PROJECT BRIEF

The Bidder must, whether or not it is specifically referred to in the Conditions of Contract and/or these Terms of Reference provide all equipment, construction plant, temporary works, labor, materials, tools, works, skills, expertise, services and transport necessary:

1. To perform all of the detailed engineering design, cost estimates, procurement, construction, testing and commissioning of Works; and
2. For the safe, convenient, reliable, efficient and satisfactory completion and operation of the Works in accordance with the Terms of Reference.
3. The Bidder is responsible for the overall functionality of the Works and the coordination of all other interfaces arising from the Works. The Bidder must perform the work in a profession, timely, safe and environmentally responsible manner.

4. All design shall be in accordance with the best modern practice and shall facilitate safe access for the inspection, cleaning, lubrication, maintenance, repair and replacement to ensure satisfactory operation under all service conditions. It shall also take account constructability, potential disturbance to and interfacing with operation of existing facilities, neighboring community and industries, and general operation and maintenance requirements.
5. The design shall result in the lowest possible life cycle cost with due regard to reliability, minimum operating and maintenance cost. The design shall be with appropriate level of automation for the treatment process system.

IV. SCOPE OF SERVICES

The guidelines for the procurement and implementation of contracts for design and build infrastructure projects shall be govern by the Annex "G" of The 2016 Revised Implementing Rules and Regulations of RA 9184 otherwise known as the "Government Procurement Reform Act". The following shall be included in the scope of services (Refer to the Conceptual Plans):

1. The project covers the design and build of the Pampanga Economic Zone Sewage Treatment Plant.
2. Technical analysis on structural, mechanical, and electrical engineering including actual test or site investigations shall be required.
3. A complete set of Structural, Architectural, Electrical and Mechanical plans in appropriate scales indicating all necessary details in order that the structures can be set out and constructed in accordance with guidelines and standards of NBCP, NSCP, PGBC, FCP, and other Referral Codes, shall be furnished by the Contractor.
4. The Contractor shall be responsible to deliver the expected outputs within the bounds of the approved project design and construction schedule upon receipt of Notice to Proceed.
5. The Contractor shall include in his proposal the related research, surveys, and technical studies and test or site investigation required, to come up with the design.
6. The Lowest Calculated Responsive Bidder shall enter into a contract with the procuring entity that shall be in the nature of a Design and Build Scheme of the project.
7. The Contractor shall then proceed with the construction of the project under the terms and conditions set forth herein.
8. Upon Project Completion and Acceptance in accordance with the terms and conditions set forth herein, the Contractor shall turnover the completed project to the procuring entity for proper disposition.

V. ABBREVIATIONS

1. DENR	Department of Environment and Natural Resources
2. HAZCOM	Hazard Communication
3. HIRAC	Hazard Identification, Risk Assessment and Control
4. HAZOP	Hazard and Operability Study
5. IEE	Initial Environmental Examination
6. JCP	Joint Commissioning Plan
7. Owner	Pampanga Economic Zone
8. CMD	Cubic Meters per Day
9. PLC	Programmable Logic Controller
10. QA	Quality Assurance

11. QC	Quality Control
12. ROQ	Right-of-Way
13. CAS	Conventional Activated Sludge
14. STP	Sewage Treatment Plant
15. TOR	Terms of Reference
16. VFD	Variable Frequency Drive
17. ACI	American Concrete Institute
18. AISC	American Institute of Steel Corporation
19. AISI	American Iron and Steel Institute
20. ANSI	American National Standard Institute

VI. STANDARDS

1. All standards used in this specification are based on American, European, and Philippine Standards. The Contractor may use other standards which are equal to or better than herein specified, The Contractor shall clearly state which standards are implemented for each element of work. Owner shall then determine if Contractor's proposal is better than owner standards.
2. If the Contractor opts to utilize codes or references other than those listed below, one (1) full authorized English copy of SUCH alternative codes and references adopted for the works shall be submitted to the owner with the final report.
3. The following codes and standards shall apply, as a minimum but not limited to:
    a. National Building Code of the Philippines
    b. 2010 National Structural Code of the Philippines Volumes 1 & 2 (NSCP)
    c. National Plumbing Code of the Philippines
    d. American Society for Testing and Materials (ASTM)
    e. American Concrete Institute Manual of Concrete Practice (ACI)
    f. American Society of Civil Engineers Manual 7-95 (ASCE)
    g. Uniform Building Code 1994
    h. American Institute of Steel Construction, Allowable Stress Design (AISC-ASD)
    i. Philippine Electrical Code
    j. Philippine Mechanical Code
    k. Fire Code of the Philippines
    l. National Fire Protection Association (NFPA)
    m. American Water Works Association (AWWA International organization for Standardization (ISO) Standards
    n. American Association of State Highway Transportation officials (AASHTO; Edition as referred to 2001 NSCP)
4. Alternatively, other Standards may be employed, subject to approval by the owner
5. Where dispute arises in the interpretation of the standards, the more stringent shall prevail.
6. Where other elements of the Works are not specified within these documents, the Contractor will be responsible for the design, construction, operation and maintenance, including, where necessary, the replacement of the works for the duration of the Contract including the operation period, the Contractor is allowed to adopt appropriate design standards and specifications suitable for the design intent subject to review/validation and approval of owner to ensure the chosen standards and specifications can provide a safe system of work that can meet the Contract requirements,
7. Unless specified otherwise, all submittals and drawings shall be in SI unit of measurement.

VII. DETAILED SCOPE OF WORKS

A. Pre-Planning Phase

Preliminary Investigations

1. These shall include, among others, information on existing site conditions that shall be used to define project design criteria, to set the basis for any change in conditions and establish preliminary project cost estimates.
2. The Influent Characteristics data and Base Plan is to be provided by the owner for information only. The Bidder shall be entirely responsible for verifying the accuracy of the information and these documents shall not form part of the Bidder's proposal
3. The Bidder shall arrange to obtain a copy of the document from owner or owner Representative. The documents will be provided as electronic files (in pdf format) upon the Bidder's request.
4. The Bidder immediately upon receipt thereof shall check all such owner furnished information and shall promptly notify owner of any omissions or discrepancies in such project, drawings or specifications.
5. The Bidder is responsible for the design under this Contract. Drawings furnished by owner shall be for purposes of information only. The Bidder shall be solely accountable for any design failure that will be incurred in the future.
6. The Contractor, by submitting their bid, represents that:
    a. They have thoroughly read and examined carefully understands fully all the bid documents and their bid will be in accordance therewith.
    b. The bid is based upon the conditions and requirements of the bid documents without exception.
    c. They had visited and inspected the Site of Works and its surroundings and satisfied themselves as to all matters pertaining to the project, including the location and the nature of the work; climatic conditions; the nature and condition of the site; transportation and communication facilities; the requirement and the availability of materials, labor, water, electric power and roads; the locations and extent of aggregate sources, and other factors that may affect the cost, duration and execution of the work; that he has determined the general characteristics of the project and the conditions indicated above.
    d. They are aware that the project shall be 180 calendar days reckoned seven (7) days from the date of the Notice to Proceed.

B. Planning / Engineering Design Development Phase

Surveys and Site Investigation

1. The preliminary survey and mapping shall determine boundaries and provide stationing along control lines to establish feature and design criteria location, and identify existing and future right-of-way limits and construction easements associated with the conceptual design.
2. The Contractor is expected to conduct actual site survey of the project area to identify preliminary boundaries of the proposed buildings. In the process, they shall be able to familiarize themselves with the existing site conditions and nearby structures.
3. In the conduct of structural surveys, the existing adjacent structures shall be considered.

4. For planning and design analysis of the project, the Contractor is expected to conduct site investigation sufficient to determine the bearing capacity and other data of the soil foundation which is necessary for the overall structural analysis and design of the building, in order to ensure the safety of the structure.

Design

The Contractor shall propose a design for PEZA's approval justified by a design narrative or write-up for the following design criteria:

1. Arrangement of Units
    a. The general arrangement of the Works shall be such that it can be fitted on the available area, be compatible with the existing and proposed landscape and surroundings, and has considered safety of workers during plant operation.
    b. The plant process areas as inlet works (screening, equalization), and sludge storage shall be fully enclosed to improve visual impact.
    c. Plant components should be arranged for safe and greatest operating and maintenance convenience, flexibility, economy, continuity of maximum effluent quality and ease of installation of future units, if required. Wherever practicable, buildings should be located adjacent to one another.

2. Flow and Loads
    a. The following flows are to be used in the design of the Works:

Table 1. Sewage Flow (STP)

Description	Values
STP Average Flow	300 m^3/day

    b. The Plant shall be capable of treating flows in the range specified above at any time during its operational lifetime, including the peak flow over, under all anticipated wastewater quality standards given in the specification.
    c. Provisions of influent and effluent flow meters are required.
    d. The process units shall be designed to allow sufficient turn-down of the works throughput during low flows. The control arrangement shall be capable of efficiently treating the full range of the flows.
    e. The treated effluent quality targets identified in the table below are required to be met for effluent discharged to the environment under all operational conditions at all time:

Table 2. Effluent Quality Limit

Parameter	Unit	Value
pH	-	6.0 – 9.5
BOD	mg/L	< 50
COD	mg/L	< 60
TSS	mg/L	< 100
Surfactants	mg/L	< 15
Oil & Grease	mg/L	5
*Ammonia Nitrogen	mg/L	4
Nitrate	mg/L	14
*Phosphate	mg/L	4
Fecal Coliform	MPN/100ml	400
Total Coliform	MPN/100ml	10,000

DAO 2021 – 19 Updated Water Quality Guidelines and General Effluent Standards for Selected Parameters

3. Combined Pre-Treatment Process
    a. The design shall take into account the flow conditions at the completion of the Works.
    b. The STP will be handling both domestic waste and pre-treated industrial waste from the Pampanga Economic Zone locators.
    c. Combined pre-treatment unit with degreasing and grit removal process shall perform screening of suspended solids, inert and other floating solids/debris; as well as oil & grease removal from the raw sewage. Thickness/sizes shall be Min. 60 l/s Output; with 2mm mesh, SS AISI 304 or 316.
    d. Manual bar fine screen thickness/sizes shall be Mesh Steel Wire with 3.6 m3/min with 2 mm slit size, SS AISI 304 or 316. The control system and the hydraulics shall allow for this to reduce solid deposition.
    e. The design of the installation must ensure access for maintenance of the equipment and in particular allow for manual cleaning of the screened solids from the screen and for cleaning away solids build up upstream and downstream of the screens.
    f. All equipment shall be shipped in one piece. All wetted parts and screen bars shall be SS AISI 304 or 316 material as a minimum.
    g. The cleaning of screened and dewatered solid material is undertaken such that there is no visual fecal matter and that the screenings are in a suitable condition for road transport and ultimate offsite disposal.
    h. The collected emulsified oils and grease shall be for proper disposal.
    i. The STP shall be able to accommodate all flow conditions, as specified, therefore an equalization tank shall be provided.
    j. Influent non-contact Doppler flow meter shall be installed as per flow requirements using SS AISI 304 or 316 material.
    k. Equalization Submersible Non-Clog channel type Transfer Pump with Cutter, shall be minimum 76.2 mm diameter or as per flow design parameters. Class shall be of Body Cast Iron FC250, Motor Shaft Stainless Steel SUS420J2.
    l. The equalization tank shall be continually mixed with air supplied by an air using Equalization Wide Band Coarse Bubble Diffusers Min. 24 holes or a per flow design requirements of SS AISI 304 or 316 material.
    m. The equalization tank should be covered and equipped with an emergency high level channel sensor to indicate the water level in tank.
    n. Option for flow redirection for cases of tank/equipment/facility maintenance while maintaining continuous and efficient wastewater treatment.

4. Secondary Treatment – Dynamic SBR Process
    a. The pre-treated wastewater from shall undergo a Dynamic Sequencing Batch Reactor (SBR) process with a continuous incoming feed. The Dynamic SBR shall have the following operations:
        i. Aeration/Nitrification Phase
        ii. Anoxic/Denitrification Phase
        iii. Settling Phase
        iv. Decant Phase
    b. The Dynamic SBR should be able to operate and handle normal cycle conditions and storm cycle conditions.
    c. The Dynamic SBR basin should have a non-hydrostatic baffle wall to separate the pre-react from the main react chamber. The pre-react chamber should be properly sized for bio-selection and to allow a continuously flow.

d. For air requirements below five (< 5) Nm3/min, a positive displacement blower is allowed. Air requirements above five (> 5) Nm3/hr, a centrifugal air-bearing turbo blower is required. The blowers shall provide adequate air supply for biological activity under required operating conditions. The duty blowers should have sufficient capacity to provide enough aeration for the biological treatment and for nutrient removal requirement. A standby unit should be installed to continuously provide the required air supply in case of breakdown of the duty blower.
e. SBR Air Motorized Valve shall be of the following thickness/size and class; Min 152.4 mm Dia., DN600, 10 Bar, Ductile Iron A536-65-42-15 Epoxy Painted.
f. SBR Waste Sludge Non – Clog Submersible Pump shall be of the following thickness/size and class; Min. 76.2 mm Dia. Bore or as per Design Capacity, Body Cast Iron FC250, Motor Shaft Stainless Steel SUS420J2
g. Centrifugal air-bearing turbo blowers must be provided with a VFD to interlock with the DO value reading in the aeration tanks. A blow off valve (BOV) should be equipped in the blower for pressure release. SBR Turbo Air Blowers should meet the following requirements:
    i. 21.29 m3/min @500mbar
    ii. Aluminum Casing & Impeller
    iii. Ti Alloy Shaft
    iv. Ni Alloy Bearing
    v. Reduce energy consumption by at least 20%
    vi. Shall have a built-in interface touch screen HMI for easier controls
    vii. Low noise and no vibration
    viii. Oil free cooling and lubrication system
    ix. Oil free maintenance
    x. Low maintenance cost

h. Air Diffusers should meet the following requirements:
i. Fine bubble diffuser type; Min 304.8 mm DISC or as per Design Capacity ii. Consist of diffuser elements, distribution piping, valves, air manifolds, blower assembly,
    iii. Include all associated equipment to provide aeration and mixing for the aeration tank(s);
    iv. Provide the required actual oxygen transfer rates as well as provide complete mixing over the entire tank.
    v. Diffuser's membrane material shall be EPDM with PTFE coating.

i. An Anoxic phase is required as part of the biological nutrient removal to promote denitrification process. Proper mixing of contents must be provided using a submersible denitrification mixer for the Dynamic SBR process.
j. A recirculating line should be included to prevent loss of microorganisms from the aeration tank and maintain an adequate population for treatment of the wastewater. The recirculating line should flow back to the anoxic zone of the process.
k. Aluminium Chlorohydrate (ACH) with 23% activated content, is dosed in the process for the removal of phosphates. ACH preparation and automatic dosing equipment must be provided.
l. A floating decanter with motorized valve made of SS AISI 304 or 316 material is required to discharge the biologically treated water from the basin and to ensure that only the layer of clear water is decanted at all times. A scum/sludge exclusion should be installed to eliminate any possibilities of solids/biomass

carryover during these periods, and to allow an easy access and service without the need to enter the basin.

m. Decanter Motorized Valve shall be of the following thickness/size and class; Min. 355.6 mm Dia. of as per design requirements, Ductile Iron A536-65-42-15 Epoxy Painted.
n. Decanter Solenoid Valve shall be of the following thickness/size and class; Min 25.4 mm Dia. or as per design requirements, Brass for Body, Stainless for Core Tube.
o. Dissolved Oxygen Meter installed shall comply with IEC 61298-2 – Process measurement and control devices – General methods and procedures for evaluating performance – Part 2 at nominal operating conditions.
p. The biological treatment process shall be designed and installed such that the treated effluent meets quality required by the DENR AO 2016-08 Class C Water, as summarized under performance specification, and is consistently and robustly met.
q. Process critical mechanical and electrical items shall be required to have a minimum of one installed standby.
r. Walkways shall be provided to access all permanent equipment within a tank. This shall include all aeration control valves. Easy access into tanks and brackets to support ladders and/or sufficiently large manways shall be provided.
s. As part of the initial design requirements, the Contractor shall fully detail the frequency and means of accessing the tank for maintenance. The Contractor shall provide all equipment and fittings needed to facilitate easy and safe maintenance access. They shall also undertake a demonstration of the means of access prior to commissioning and make modifications to the proposal/equipment based on the findings of this demonstration.
t. The design of aeration systems, inclusive of all pipe works, valves, and headers for the process aeration and mixing requirements, shall be using Fine Bubble Diffusers.
u. The Contractor shall submit within the bid submission the calculations supporting the design of the aeration system proposed, including all parameter values and other factors assumed in those calculations.
v. Option for flow redirection for cases of tank/equipment/facility maintenance while maintaining continuous and efficient wastewater treatment.

5. Post-treatment
    a. The disinfection unit should be utilized and capable of eliminating pathogenic microorganisms in the effluent prior to discharge.
    b. The Contractor may use UV Disinfection Process or Chlorination Disinfection Process
    c. For final effluent chlorination, the system shall use sodium hypochlorite. The sodium hypochlorite shall be delivered to the site in liquid form at minimum 7% concentration.
    d. The final effluent shall be required to achieve the minimum disinfection standard as indicated by the Coliform levels in Effluent Limits. Residual Chlorine should be 0.3 mg/L minimum.
    e. A minimum contact time (CT) for chlorine disinfection shall be 25 to 30 minutes. The Contractor shall be required to confirm the suitability of this CT based on the expected quality of the effluent and decay rates.

f. Plug flow reactor shall be provided for disinfection and mixing the treated water and the disinfectant. The design of the plug flow reactor shall ensure that sufficient mixing is provided at the upstream side of the tank.
g. For UV disinfection, treated effluent will pass through ultraviolet lamps submerged I the effluent, instantaneously neutralizing microorganisms.
h. Ultraviolet Sterilizer shall be of the following thickness/size and class; Min 195 m3/h @ 254nm, 1 cm or as per design requirements, SS AISI 304 or 316 or HDPE.
i. Effluent Electro Magnetic Flowmeter shall be of the following thickness/size and class; Min 406.4 nm Dia. or as per design requirements, Carbon Steel ASTM A 105 for housing and Flanges, SS AISI 304 or 316.
j. Provision of catch-basin as water sampling area located after the disinfection unit and before connection to public drainage/sewer line
k. A post-treatment system to re-use the treated water can be proposed as an optional item, with separate cost or at no cost to the owner.

6. Sludge Handling
   a. An aerobic sludge digester (ASD) tank shall be provided for the waste activated sludge (WAS) generated in the aeration tanks. This tank shall have air mixing and a minimum retention time of five (5) days under the full design capacity to stabilize the biomass.
   b. Aerobic Sludge Digester Wide Band Bubble Diffuser shall be of the following thickness/size and class; Min. 24 Holes L=24' or as design requirements, SS AISI 304 or 316.
   c. ASD Non-Clog Submersible Transfer Pump/Screw Press Feed Pump shall be of the following thickness/size and class; Min 76.2 mm Dia Bore or as design requirements, Body Cast Iron FC250, Motor Shaft SS SUS420J2.
   d. ASD Air Blower shall be of the following thickness/size and class; Min. 26.33 M3/Min or as design requirements, Casing Aluminum AL 365, Impeller AL 7075 Shaft Ti Alloy, Bearing Ni Alloy.
   e. The stabilized and digested sludge from the aerobic sludge digester will be pumped to the proposed dewatering facility.
   f. The Sludge Dewatering Process shall require the following; Sludge reaction Loop, Volute Dewatering Press, Polymer Dosing Pump, Polymer Stock Solution Tank, Polymer Stock Solution Tank Air Mixing.
   g. The dewatering press to be used is known as the Volute Screw Press. One duty unit Volute Dewatering Press shall be provided with Min. 15-20 Kg / Hr Vol Cap. or as per design requirement, of SS AISI 304 or 316 Ti (1.4571) material.
   h. Polymer Dosing Pump shall be of the following thickness/size and class; Min V6, 31.2 L/hr @ 2 Bar or as per design requirement, Body Aluminum Die Cast Molded reinforced by GFRPP.
   i. Polymer Stock Tank shall be of design requirements and made of Polyethylene material.
   j. Polymer Solution Tank Air Mixing shall be of the following thickness/size and class; Min. 304.8 DISC or as pre design requirement, PTFE Coated Membrane.

7. Noise
   a. The operational site shall not cause excessive noise disruption to the surrounding community.
   b. The Contractor shall perform a noise survey, prior to commencing construction, to determine the current noise level at the site and to demonstrate that the

upgraded STP, during construction and at its full operation, has not increased the current noise levels above 3dB.

8. Chemical Dosing and Storage Facilities
    a. All storage tanks transfer and dosing pumps shall be located within bund wall. Dedicated bund wall shall be provided for different chemical storage tanks. If the chemicals are compatible and are safe to be mixed, the bund wall can be designed to locate more than two types of chemical storage tanks.
    b. Chlorine storage and dosing facilities shall be provided in well ventilated rooms. All chemical storage area shall be properly ventilated. As part of the installation a bund with adequate drainage must be provided to allow safe disposal / drainage of spilt polymer. A secondary containment must be provided for liquid chlorine.
    c. The chemical storage tanks shall be fabricated from FRP, MDPE, HDPE or PP, PE. All chemical storage should be located in the area not prone to flooding or flood protected.

9. Odor Control Process
    a. The anticipated odor management will comply with government regulations. The facility will comply with ISO (international) and DIN (German) standards acceptable to even areas in close proximity to residential areas. Principles of odor management are.
        i. No odor is emitted from operations with natural ventilation;
        ii. Malodorous sewage is encapsulated in airtight operations;
        iii. Reliable equipment and back up are provided.

10. Mechanical Works
    a. The Contractor shall supply all materials, labor, equipment and consumables for the installation of the mechanical equipment and accessories.
    b. The mechanical equipment and accessories shall be those manufactured by U.S.A., Japan, South Korea, and European countries only.
    c. The Works shall include but not be limited to:
        i. All associated agitators, mixers, blowers and pumps;
        ii. All required ventilation, odor control (optional), and exhaust systems;
        iii. All required pipework, control points and connections;
        iv. All required valves or penstocks for manual control, isolation, automatic control including those required to enable the isolation or now control to each individual item of STP
        v. All required fittings, support and accessories. vi. All required plant access walkways and stairways;
    d. The material selection shall take into account the potentially corrosive environment within which the equipment operates. Refer to the table below:

Table 3. Pipework

Area	Pipes			
	Location	Material	Support	Color
Aeration	Above Ground	GI Pipe	Mild Steel (epoxy coated)	
	Inside the tank (where submerged)	ABS		
Sewage/Sludge	Above ground	SS 304, ABS	Mild Steel (epoxy coated)	Black

Compressed Air	Dewatering equipment	GI	Mild Steel (epoxy coated)	Light Blue
Chlorine	Chemical Room	HDPE, CPVC	Mild Steel (epoxy coated)	Yellow
Polymer	Polymer System	CPVC, ABS	Mild Steel (epoxy coated)	Yellow

e. All exposed pipes shall be labeled accordingly to identify the fluid that the pipes convey.
f. Pipe labeling shall be either in the form of paint or color bands. Paint and stickers shall be weather proof and not easily scratched or withered.
g. All exposed metallic pipes shall be painted except stainless steel. Paints shall conform to provide primary corrosion protection for metallic pipes.
h. All exposed thermoplastic pipes shall be painted with water-based enamel if the color does not conform to the table.

11. Electrical and Instrumentation
    a. The STP site shall be provided with a complete power supply system connected to the nearest power line and electrical sub-station. The Contractor shall be responsible for the early coordination with the service provider and owner regarding the construction of distribution line and determine the location of the project's substation/transformer stepdown. The Owner shall provide the nearest power supply line (feeder line) to the STP.
    b. All electrical controls for all processes shall be at the Motor Control Center (MCC) and located in STP building. The MCC rooms shall be well illuminated. All motor control panel (MCC) shall be equipped with surge suppressors to protect equipment against surge and voltage fluctuations.
    c. Electrical distribution boards and control panels shall be installed in locations not prone to flooding and shall be located 0.3 m above the finished grade level of the STP or the highest recorded flood level plus ten percent (10%), whichever is higher.
    d. The electrical/instrumentations control system shall include main and branch circuit breakers, starters, contactors, and reset buttons selector switches, push buttons and pilot lights, circuit control items for electrical control or level switches of the various STP components and all necessary wiring and conduits. All electrical / instrumentations controls shall be wired so that the STP equipment can be operated either automatically or manually. The system shall be equipped with a PLC for automation of the whole process. The PLC shall have digital inputs that can interface to relays, relay output for digital outputs, and 4-20mA analog inputs / outputs. The communication protocol shall be through Profibus or Ethernet. Surge suppressor shall also be provided to protect the PLC, HMI and instruments from transient voltage. The PLC shall be equipped with an override system to manually operate the whole control system (in case of PLC failure) to achieve the intended proper operation. All languages shall be in English and programming files, including copies of development files, programmer notes and as-built programs, shall be provided for owner as part of the handover documents. The software shall be provided with the password submitted to owner as a part of the programming files, to enable editing.
    e. The operation shall be integrated that it can run by itself in Automatic mode of operation, with provisions for accepting several processes set points. The

control system shall control the operation of the STP and interface with other components as necessary to form a fully functioning system.

12. Civil / Structural Works
    a. The Contractor shall supply alt materials, labor, equipment, and consumables for the construction of the civil works and structures of the project as per approved battery limit. The civil works for this project must be as follows:
    b. All tanks and structures that will complete the whole sewage treatment facility.
    c. Internal surfaces of all the tanks satisfying 7.3.1 shall be water proofed and leak proofed. The water proofing materials shalt be those in accordance with internationally accepted standards and quality.
    d. All tank structures shall be provided with stainless steel safety railings, required equipment platforms, and sufficient lightings for repair and maintenance purposes unless existing structures have these features already and in good condition.
    e. All tanks shall be constructed with type 2 ready-mix cement conforming to ACI 350.
    f. All exterior surfaces of new and existing tank structures that are deemed necessary for repainting shall be coated with three layers of owner's approved paints and colors. All tanks must be likewise labeled according to its designated process units.
    g. Inside wall of all tanks should be provided with fixed stainless-steel access ladder for inspection, repair and maintenance purposes unless existing structures / tanks have these features already and are in good condition.
    h. The Contractor shall also be responsible for site clearance, clean up and demobilization works post completion of the Works.

Engineering Design

1. The Contractor shall prepare the basic plans and drawings prior to the detailed engineering design. It shall include the following:
    a. Horizontal and vertical process flow diagrams that include process mass balance chart
    b. Treatment plant hydraulic profile
    c. Civil/Structural and Architectural plans, sections and elevations.
    d. The plans and drawings shall be 20"x 30" in paper size.

2. Detailed Engineering Design, shall include the supply of materials, labor, equipment and consumables for the preparation of detailed construction plans and drawings including the preparation of the detailed technical specifications. Detailed engineering shall include the following:
    a. Plant layout with profile, section and perspective view
    b. Site development plan and sections

3. For the Preparation of As-Built Plans, Drawings and other Documents, the Contractor shall submit to the client three (3) sets of blue print copies and one (1) electronic copy of as-built plans and drawings of the sewage treatment plant two (2) weeks after the completion of construction and installation works. Three (3) copies of Operation Manual of the whole STP and Equipment Vendor Data must be submitted to owner after physical completion of Works before biological start up.

C. Construction Phase

General Requirements

1. The work covered under this contract consists of the furnishing all materials, labor, equipment, transportation, incidentals, facilities, and superintendence necessary to complete the project.
2. The Contractor is expected and required to attend the important phases of the bidding process of the said project. All concerns and questions shall be discussed on the PreBid Phase.
3. The Contractor shall be responsible for carefully examining, comparing and verifying the data furnished by the plans and specifications, the Contractor shall submit the matter to PEZA or authorized representative for the proper explanation or necessary correction, before any adjustment shall be made. Any adjustment by the Contractor without such determination shall be at his risk and expense.
4. Omitted or wrongly described details of work, which are manifestly necessary to carry out the true intent of the drawings and specifications, shall be performed as if fully and correctly set forth and described in the drawings and specifications.
5. PEZA may, from time to time, make changes in the specifications and construction drawings. However, if the cost to the Contractor shall be materially increased by such change, the PEZA shall pay the Contractor for the reasonable cost in accordance with the changes.
6. The Contractor shall comply with the laws, City or Municipal Ordinances and all government specifications and regulations in so far as they are binding upon or affecting the portion the work hereto. The Contractor shall obtain all necessary licenses and permits and pay all taxes or fees, which may be encountered in connection with the prosecution of the work. They shall also be responsible for all damages to persons or property that may occur.
7. Unless otherwise specified, all materials shall be new and free from defects and imperfection. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall be performed in the best and acceptable manner in strict accordance with the requirements of the plans and specifications. Preference will be given to articles or materials that are locally manufactured, conditions of quality and price being equal.
8. When called for, the Contractor shall furnish, for approval, full information and satisfactory evidence as to the kind and quality of materials or articles to be incorporate in the work. The Contractor shall furnish, for PEZA's approval, all samples when so directed.
9. The work shall be in accordance with approved samples. Materials and articles installed or used without such approval shall be at the risk of subsequent rejection. Any failure on the part of the Contractor to conform use materials that are not specified herein shall be under subsequent rejection, unless subject for approval.
10. Any alteration or revision of material usage without approval from PEZA shall make the Contractor responsible and liable in terms of guarantee, workmanship and defects.
11. Workmanship shall be in accordance with the best standard practices and all operations required under any and all parts of the Specification shall be undertaken in a neat, workman-like manner. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.
12. Any alteration or revision on the execution of drawings without approval from PEZA shall be under subsequent rejection and shall make the Contractor responsible and liable for any workmanship and execution defects.

13. Defective workmanship shall be remedied by the Contractor, at their expense. They shall not be entitled to any payment hereunder until defective workmanship has been remedied.
14. The Contractor shall provide and maintain adequate weather-tight facilities with water, light, and toilet facilities and shall keep such places clean. They shall remove all connections and appliances connected there with prior to the completion of the Contract and leave the premises perfectly clean.
15. The Contractor shall furnish all temporary water, lights and power and shall pay all expenses in connection therewith. Furthermore, the Contractor shall provide and pay for all water expenses for building purposes that are required by all trades.
16. The Contractor shall put up safety measures and continuously maintain adequate protection of all his work from damage and shall protect the property. They shall make good any such damage, injury or loss.

Site Preparation

1. The Contractor shall furnish equipment and perform labor required to complete demolition of the existing structures, removal of salvaged materials, and disposal of resulting trash, waste, and the like. See drawings for area coverage of work involved.
2. The Contractor shall visit the site of the work and examine the premises to fully understand all existing conditions relative to the work. No increase in cost or extension of performance time will be considered from failure to verify and know actual site conditions.
3. The Contractor shall secure and pay for all necessary permits needed for the work.
4. The Contractor shall protect adjacent properties, persons, shrubs, trees, lawns, structures, and utilities against harm or damage.
5. All salvageable material shall remain in the property unless disposal is instructed by PEZA.
6. All debris and other materials resulting from demolition work (if applicable) shall be immediately removed from the premises and dumped at sites provided by the Contractor.

Scope

The Contractor shall proceed to the construction using the detailed plans and specifications as basis which was submitted by the Contractor, duly approved by PEZA and DENR-EMB, if necessary. The following works shall be included, but not limited to:

	ITEM DESCRIPTION	QTY	UNIT
A	GENERAL REQUIREMENTS		
	Mobilization / Demobilization	1	lot
	Occupational Safety and Health Program, PPEs, Billboards, Signages	1	lot
	Site Preparation	1	lot
	Provision for Temporary Facilities	1	lot
	Permits and Clearances	1	lot
B	PLANNING AND ENGINEERING DESIGN PHASE		

	Survey and Site Inspection	1	lot
	Design	1	lot
	Conceptual Plans	1	lot
	Detailed Engineering Plans	1	lot
C	CONSTRUCTION PHASE		
	Earthworks		
	Hauling of Excavated Materials and Debris	1	lot
	Excavation Works	1	lot
	Civil Works		
	Foundation	1	lot
	Concreting Works	1	lot
	Masonry Works	1	lot
	Roofing Works	1	lot
	Painting Works	1	lot
	Ceiling Works	1	lot
	Floor Finishing Works	1	lot
	Doors, Windows, Hardware	1	lot
	Electrical Works		
	Roughing-ins	1	lot
	Electrical System	1	lot
	Lighting System	1	lot
	Emergency System	1	lot
	STP		
	Combined Pre-Treatment	1	lot
	Secondary Treatment Dynamic SBR	1	lot
	Post Treatment	1	lot
	Sludge Management	1	lot
	Chemical Dosing and Storage Facilities	1	lot
	Control Room	1	lot
	Electrical and Instrumentation	1	lot
	Odor and Noise Control	1	lot
C	TURNOVER		
	Start-Up, Testing and Commissioning	1	lot
	Preparation of Operation and Maintenance Manual	1	lot
	Training of Sewage Treatment Plant Operators	1	lot
	Proving Treatment Performance and Efficiency	1	lot
	As-Built Detailed Plans	1	lot

In no circumstances shall the Contractor install / construct any features of the project which is not in conformity with the approved plans, specifications including quantities thereof. All other construction works not mentioned in the proposed plans and / or the above works shall be deemed included and it is the responsibility of the contractor not to exceed their submitted project cost.

VIII. PROJECT COST ESTIMATES

The bidders shall submit the quantities and cost of the different types of works to be carried out in accordance with DPWH Department Order No. 197 series of 2016 dated 07 October 2016. In particular, the quantities and cost of each work item shall be calculated and a bill of quantities shall be prepared. The bidders shall draw up a unit price analysis for each of the main pay work items.

Construction Cost of the Project

Rectangular Snip

Direct Cost

1. Materials
   a. Cost of Materials to be used in doing the work item called for, which shall include the following
   b. Cost of source, including processing, crushing, stockpiling, loading, local taxes, construction and/or maintenance of haul roads, etc.
   c. Expenses for hauling to project site
   d. Handling expenses
   e. Storage expenses
   f. Allowance for waste and/or losses, not to exceed 5% of materials requirement.
2. Labor
   a. Salaries and wages as authorized by the Department of Labor and Employment
   b. Fringe benefits, such as vacation and sick leaves, benefits under the Workmen's Compensation Act, GSIS and/or SSS contributions, allowances, 13th month pay, bonuses, etc.
3. Equipment
   a. Rental of equipment which shall be based on the prevailing "Associated Construction Equipment Lessors, Inc." For simplicity in computation, the operated rental rates are preferred over the bare rental rates as the former includes operator's wages, fringe benefits, fuel, oil, lubricants and equipment maintenance. The make, model and capacity of the equipment should be indicated in the detailed unit cost analysis.
   b. Mobilization and demobilization shall be treated as a separate pay item. It shall be computed based on the equipment requirements of the project stipulated in the proposal and contract booklet. Mobilization and demobilization shall not exceed 1% of the Estimated Direct Cost (EDC) of the civil works items.
4. Permits and Clearances
   a. Cost for Permits, Clearances and other Government Taxes (i.e. LGU Permits, Bureau of Fire Protection Clearance, etc.) shall be included in the cost under Program of Works (POW) and estimate / ABC.

Indirect Cost

1. Overhead Expenses - 7 - 11% of the EDC, which includes the following:
   a. Engineering and Administrative Supervision.
   b. Transportation allowances.
   c. Office Expenses, e.g., for office equipment and supplies, power and water consumption, communication and maintenance.
   d. Premium on Contractor's All Risk Insurance (CARI).
   e. Financing Cost.
      i. Premium on Bid Security

ii. Premium on Performance Security
iii. Premium on Surety for Advance Payment iv. Premium on Warranty Bond (one year)

2. Contingencies - ranges from 0.5 - 3% of the EDC. These include expenses for meetings, coordination with other stakeholders, billboards (excluding Project Billboard which is a pay item under the General Requirements), stages during ground breaking, inauguration ceremonies, and other unforeseen events.
3. Miscellaneous Expenses - ranges from 0.5 - 1% of the EDC. These include laboratory tests for quality control and plan preparation.
4. Contractor's Profit Margin - shall be 8% of the EDC for projects above Php 5 Million
5. VAT Component - shall be 5% of the sum of the EDC, OCM and Profit.
6. The following items shall not be subjected to OCM and Profit mark-up:
   a. Mobilization and demobilization
   b. Provision of Service Vehicle
   c. Permits and Clearances
7. The following non-civil works items shall not be subjected to OCM mark-up:
   a. Field Office and Living Quarters (Rental Basis)
   b. Furnishing of Furniture, Survey Equipment and Consumables
   c. Assistance to the Engineers
   d. Photographs
   e. Health and Safety
   f. Traffic Management
   g. Environmental Compliance
   h. Communication Equipment, etc.

Approved Budget for the Contract

The Contractor shall ensure that the required works do not exceed the Approved Budget for the Contract (ABC). The estimated ABC is **Php 25,000,000.00** (inclusive of VAT). All other incidental works that might arise are deemed included and to the account of the Contractor. The project should be completed within **180 calendar days**.

IX. CONSTRUCTION CONSIDERATIONS

Permits and Clearances

1. All necessary permits, licenses and other pertinent documents, required for the construction of the Works shall be secured by the Contractor. All permits/licenses to be secured by the Contractor must be enumerated immediately after issuance of Notice to Award (NOA) to avoid conflict during project implementation.
2. Owner shall assist the Contractor with preparation of applications; however, the Contractor shall inform owner at the latest one (1) week after the Effective Date about any requirements that need to be fulfilled by owner to facilitate permit acquisition.
3. The Contractor shall be responsible for Application of both temporary and permanent connection for utilities. The cost of the application, connection and installation shall be paid by the Contractor. The application for permanent connection shall be named after the owner.
4. The Contractor shall cover and all expenses necessary and incidental for the project and shall be able to secure the necessary permits for the project. The Contractor shall

obtain and pay the corresponding fees for all necessary approvals, permits, certificates and clearances, such as the following, whenever necessary:

a. Building Permit and other Ancillary Permits
b. Fire Safety Evaluation Clearance
c. Fire Safety Inspection Certificate
d. All other permits as may be required for the construction

5. The Contractor shall secure all pertinent permits related to the project especially ECC and the wastewater discharge permit from the DENR-EMB. As basis of acceptance, the final effluent must undergo effluent analysis from a 3rd party laboratory accredited by the DENR.

Temporary Structures and Facilities

The Contractor shall provide and maintain the following:

1. Temporary office and/or quarters for the Contractor's project team personnel with water, light, telephone and toilet facilities.
2. Temporary bunkhouse/quarters for the Contractor's workforce complete with toilet and bath facilities.
3. Cost of power and water shall be shouldered by the Contractor
4. Safety and security for the project implementation shall be enforced by the Contractor and must be in conformity to the respective zones' safety, security, and house rules and regulation.

Mobilization and Construction Proper

1. The Contractor shall mobilize all the required project team personnel, equipment, tools and manpower with the required skills and in sufficient number as may be necessary for his efficient undertaking of the project.
2. All materials and plant equipment should be delivered to site and stored in as secure place, in a manner acceptable to owner.
3. Outside storage of materials and equipment subject to degradation by the elements shall be in weather tight enclosures provided by the Contractor.
4. The Contractor shall maintain complete and accurate records available for owner's inspection of all materials and plant equipment received, stored and issued for use in the performance of the Contract.
5. The Contractor shall execute all the works under the contract in strict accord with standard engineering methodology and procedures and shall be responsible for maintaining cleanliness and orderliness in the project area throughout the duration of the contract.

Safety

1. The Contractor should fully comply with the specifications of OSHS, Procedural Guidelines D.O. 13 of DOLE during construction and operation of STP. Adequate provision shall be made to effectively protect workers, operators and visitors from hazards. The following shall be provided as a minimum:

a. Handrails and guards around tanks, trenches, pits, stairwells, and other hazardous structures.
b. First aid equipment.
c. Protective clothing and safety equipment, such as air pack, goggles, gloves, hard hats, safety harnesses, safety belt, lanyard, tripod with winch, SCBA,

chemical suit and full-face shield with canister and gas monitor; compliant with PPE-I requirement of Bureau of Working Conditions of the Procedural Guideline D.O.13;

d. Portable blower and sufficient hoses if required;
e. Appropriately placed warning signs for slippery areas, non-potable water fixtures, low head clearance areas, open service manholes, hazardous chemical storage areas, flammable fuel storage areas, no smoking signs in hazardous areas; etc. Where required, the associated operational and health and safety issues resulting from the enclosed treatment process and operational site shall be incorporated into the design, including temperature, noise, lighting, ventilation and confined space requirements. This should comply with specifications of OSHS.

2. Every effort shall be made at the design stage to minimize health and safety issues during the construction, operation and ultimate demolition of the treatment plant, and 'designing-out' hazards wherever reasonably practicable. When handling mechanical equipment, Contractor must comply with EHS Instruction and Guidelines Manual on Handling Tools and Equipment and OSHS Rule 1200 on Machine Guarding.
3. Walkways, Stairs and Access Platforms
    a. Walkways and stairs of adequate width shall be provided for safe access to the STP for monitoring, inspection and maintenance.
    b. Access platforms shall be provided for major plant components, which cannot be operated or maintained from floor level. Access routes shall be provided for the removal of large plant components on trolleys or similar handling appliances. Stairways shall be provided for access.
    c. For areas where stairways are not practical, cat ladders or other means shall be provided for access.
    d. The design of stairways and ladders shall include safety provisions i.e. safety cage for cat ladders. Enclosures shall be for approval of owner.
    e. Special arrangements for handicapped persons in accordance with OSHS Rule 1060 on Premises on Establishment.
4. The Contractor shall ensure that all construction activities are undertaken in accordance with the Procedural Guideline D.O. 13 of DOLE. This should apply, but not be limited to provision of the suitable access means SUCH as walkways, stairs, platforms, roads, pathways, signage, lighting, and fire protection and lifting.
5. Use of Cranes should comply with the Crane Inspection checklist (Annex CHE-I) stated in D.O. 13. The heavy equipment operator must undergo training provided by DOLE accredited training organization. Heavy equipment must undergo a 3rd party certification by DOLE Accredited testing organization. The general constructor must provide additional construction safety and health officer for every ten units of heavy equipment assigned to project site.
6. Dry chemical ABC, 10 pounds type portable fire extinguishers shall be provided for immediate use.
7. Emergency light and photo Luminescent exit signs shall be provided in areas where operators will be working. The hose reels shall be provided at locations as required by the Fire Services Department.

Signage

All signage required for the safe and efficient operation of the Works shall be provided including but not limited to internal signage and labeling of rooms, chemical storage area, and equipment as well as external labeling of buildings, road signage and road marking. This

shall also include provision of the signage noting the presence of the new STP, associated traffic routes and pedestrian routes on the public highway. The signage shall follow owner corporate branding requirements, signage content and location shall be agreed with owner before implementation.

Vehicular Access

1. Vehicular access shall be provided to all buildings and other structures in accordance to OSHS Rule 1040 as follows:
    a. Vehicular access shall lead directly to the loading / unloading area for the removal of the plant components for maintenance.
    b. For process consumables delivered in vehicular form, vehicular access shall be provided directly to the point of storage.
2. A minimum headroom of 4.5 m and minimum width of 4.5 m shall be provided for all vehicular access routes which are not required for access by Fire Services Vehicles or other emergency vehicles. Headroom inside buildings shall be minimum 2.7 m except where otherwise specified. Headroom shall be measured at the point of lowest clearance, e.g. in areas with pipes suspended from ceilings, headroom shall be measured from the bottom of the pipe or hanger, and whichever is lowest. Headroom inside areas with suspended ceilings shall be minimum of 2.4 m and headroom inside a building with equipment-2.2 m.

Staff Requirements

The Contractor shall provide adequate number of qualified professionals, support and administrative staffs to perform the services described herein. The key personnel to be assigned should possess the adequate experience in his/her field of specialization in the completion of this project. The general qualifications of the minimum key personnel are as follows:

Design Stage

Key Personnel	General Experience	Relevant Experience
Design Architect	5 years	3 years
Structural Engineer	5 years	3 years
Electrical Engineer	5 years	3 years
Mechanical Engineer	5 years	3 years
Draftsman	1 year	1 year

Construction Stage

Key Personnel	General Experience	Relevant Experience
Project Manager	5 years	3 years
Safety Officer	5 years	3 years
Quality Controller	3 years	1 year
Quantity Surveyor / Cost Analyst	3 years	2 years
Foreman	10 years	5 years
Draftsman	1 year	1 year
Skilled Worker	5 years	3 years
Helper	1 year	1 year

Schedule of Activities

The project is envisioned to be completed in six (6) months, consisting of design / preconstruction, construction and turn-over respectively. The design / pre-construction phase will be done in one (1) month period to cover activities in preparing detailed engineering design and project mobilization. Other works shall be completed in four (4) months.

SCOPE	MONTHS					
	1	2	3	4	5	Remarks
Design						All plans shall be approved prior to start of construction
Mobilization						
Construction						
Turn-Over						Subject to Proving Treatment Performance and Efficiency

X. MISCELLANEOUS PROVISIONS

Start-Up, Testing and Commissioning

The Contractor shall supply all materials, labor, equipment, and (consumables good for two months) supply for the start-up and commissioning of the treatment plant. The seed sludge to be used for the commissioning shall be supplied by the Contractor. The Contractor shall conduct the testing and commissioning for two (2) months period.

Preparation of Operation and Maintenance Manual

The Contractor shall prepare and submit one electronic copy each of the draft operation and maintenance manual for review of owner. The Contractor shall submit three (3) copies of the final operation and Maintenance Manual to the owner prior to commissioning of the Sewage Treatment Plant (STP). The operation and maintenance manual shall include operating and maintenance procedure and program and complete copies (1 original and 2 colored photocopies).

Preparation Training of Sewage Treatment Plant Operators

The Contractor shall provide their own operators for the testing and commissioning of the facility. The Contractor shall conduct a minimum of one-day classroom lecture and one-month hands-on training of operators of the wastewater treatment plant.

Proving Treatment Performance and Efficiency

The Contractor shall conduct a treatment performance efficiency guarantee test run for one month after the commissioning period and process proving testing for a period of not less than six (6) months after Works acceptance. Composite samples final effluent shall be collected and analyzed for a period of four (4) weeks in each month during the guarantee test run. Results of laboratory analysis of all effluent samples shall conform to the guaranteed effluent quality. Details of guarantee test run and process proving procedure will be determined by both owner and Contractor prior to signing of contract upon NOA.

XI. CONTRACT IMPLEMENTATION (from Annex "G" of the IRR of RA 9184)

1. No works shall commence unless the Contractor has submitted the required documentary requirements and the procuring entity has given written approval. Work execution shall be in accordance with reviewed and approved documents.
2. The Contractor shall be responsible for obtaining all necessary information as to risks, contingencies and other circumstances which may affect the works and shall prepare and submit all necessary documents specified by the procuring entity to meet all regulatory approvals as specified in the contract documents.
3. The Contractor shall submit a detailed program of work within fourteen (14) calendar days after the issuance of the Notice to Proceed for approval by the procuring entity that shall include, among others:
   a. The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and construction;
   b. Periods for review of specific outputs and any other submissions and approvals;
   c. Sequence of timing for inspections and tests as specified in the contract documents;
   d. General description of the design and construction methods to be adopted;
   e. Number and names of personnel to be assigned for each stage of the work;
   f. List of equipment required on site for each major stage of the work; and
   g. Description of the quality control system to be utilized for the project.
4. Any errors, omissions, inconsistencies, inadequacies or failure submitted by the Contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the Contractor's cost. If the Contractor wishes to modify any design or document which has been previously submitted, reviewed and approved, the Contractor shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.
5. As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:
   a. Change Orders resulting from design errors, omissions or nonconformance with the performance specifications and parameters and the contract documents by the Contractor shall be implemented by the Contractor at no additional cost to the procuring entity.
   b. Provided that the Contractor suffers delay and/or incurs costs due to changes or errors in the procuring entity's performance specifications and parameters, he shall be entitled to either one of the following:
      i. an extension of time for any such delays under Section 10 of Annex "E";
      ii. or payment for such costs as specified in the contract documents, provided, that the cumulative amount of the variation order does not exceed ten percent (10%) of the original contract price.
6. The contract documents shall include the manner and schedule of payment specifying the estimated contract amount and installments in which the contract price will be paid.
7. The Contractor shall be entitled to advance payment subject to the provisions of Section 4 of Annex "E".
8. The procuring entity shall define the quality control procedures for the design and construction in accordance with agency guidelines and shall issue the proper certificates of acceptance for sections of the works or the whole of the works as provided for in the contract documents.
9. The Contractor shall provide all necessary equipment, personnel, instruments, documents and others to carry out specified tests.

10. All design and build projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Article 1723 of the New Civil Code of the Philippines.
11. The Contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty periods specified in Section 62.2.3.2 of the IRR.

XII. SUBMITTALS

Upon the submission of bids, the Contractor shall provide the following documents for evaluation:

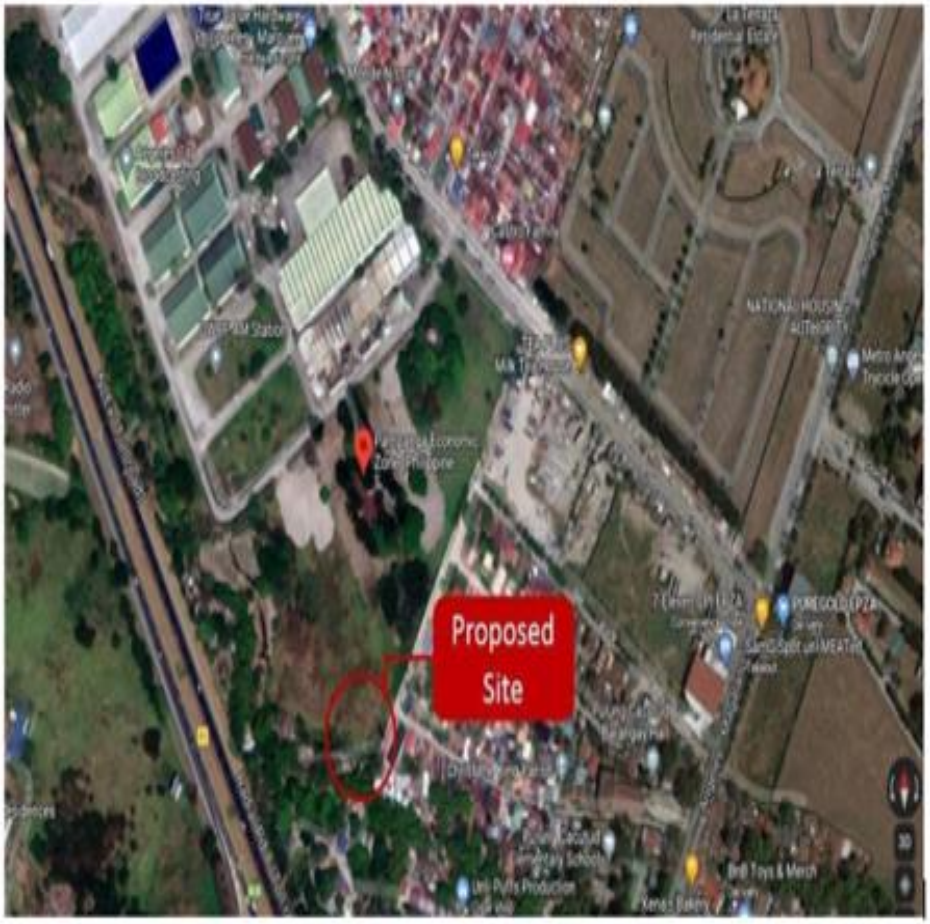
1. Design Narrative - Write-up on the design including rationale and justification.
2. Horizontal and vertical process flow diagrams that include process mass balance
3. Treatment Plant Hydraulic Profile
4. Conceptual Plans
    a. Perspectives
    b. Site Development Plans, scaled at 1:500M or 1:1000M
    c. Architectural Plans, scaled at 1:100M
    d. Structural Plans, scaled at 1:100M
    e. Blow-up Plans, scaled at 1:50M
    f. Electrical Plans, scaled at 1:100M
    g. Mechanical Plans, scaled at 1:100M
    h. Sanitary / Plumbing Plans, scaled at 1:100M
5. Bill of Materials
6. Schedule of Finishes
7. Technical Specifications
8. PERT-CPM

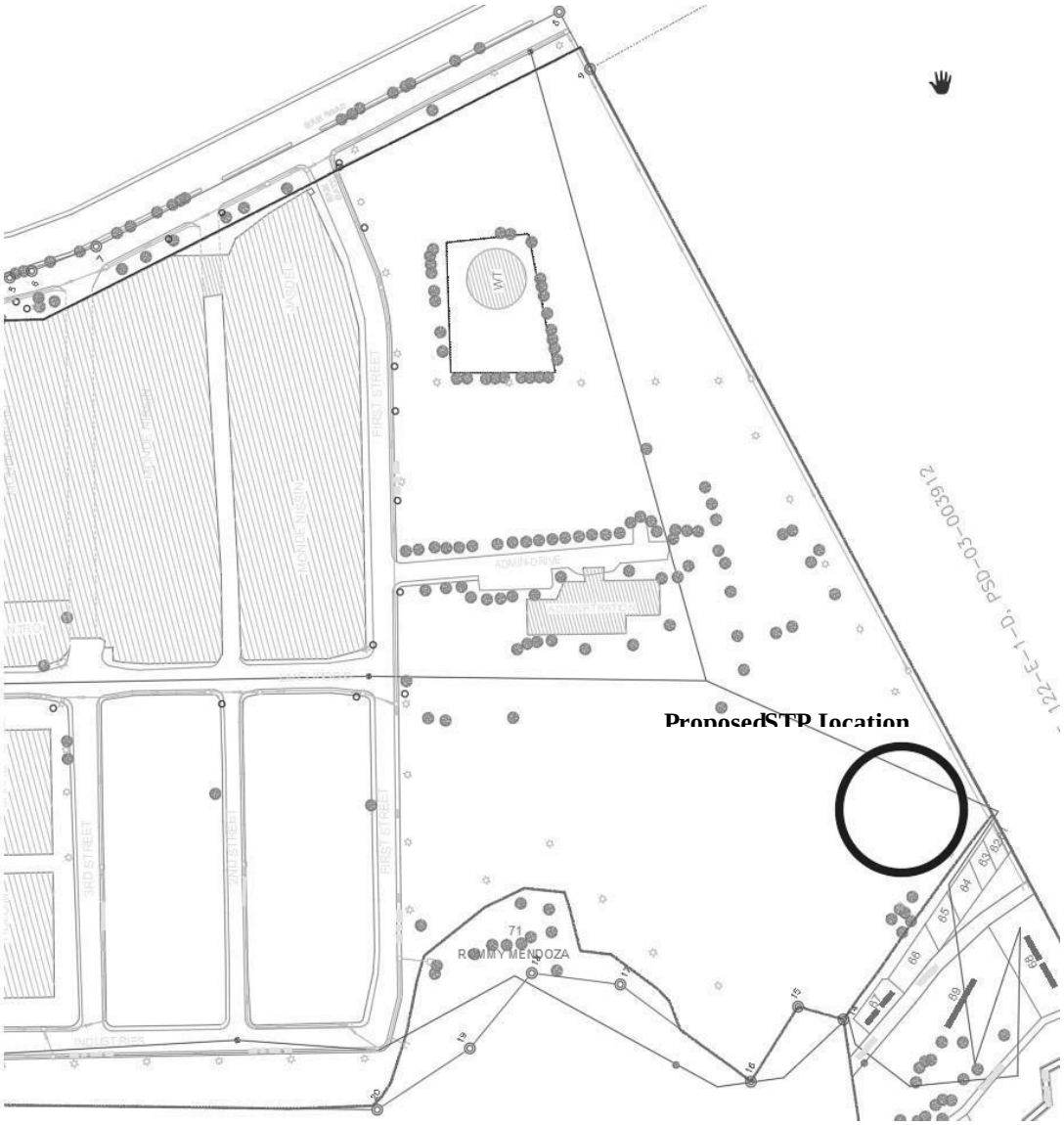
Upon the award of contract / Notice of Award (NOA), the Contractor shall provide the following documents necessary for PEZA's approval and for preparation of detailed architectural / engineering design, permits and other requirements:

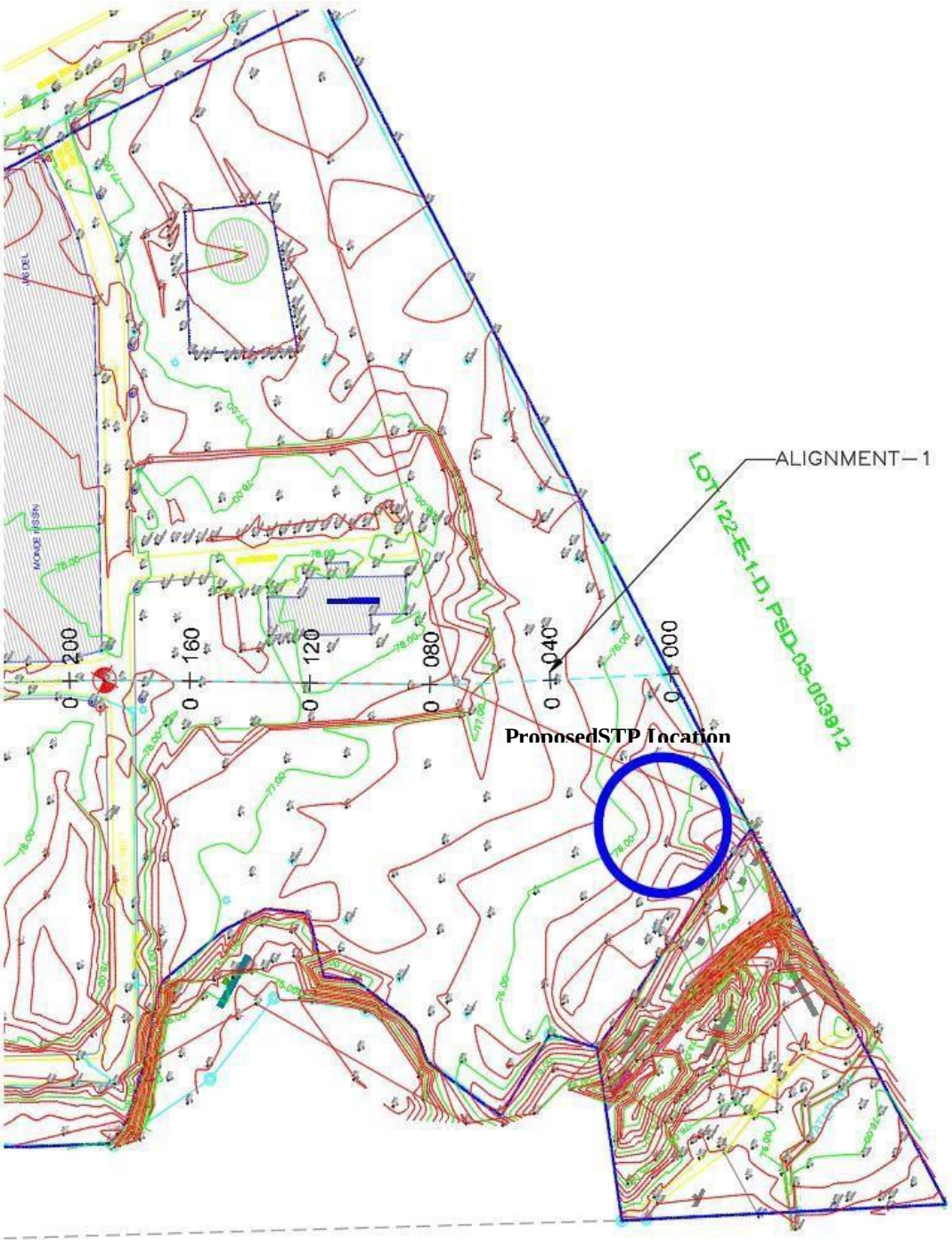
1. Perspective Views / Architectural Visualizations
2. Horizontal and vertical process flow diagrams that include process mass balance
3. Treatment Plant Hydraulic Profile
4. Construction Drawings
    a. Site Development Plans
    b. Architectural Plans
    c. Structural Plans
    d. Blow-up Plans
    e. Electrical Plans
    f. Mechanical Plans
    g. Sanitary / Plumbing Plans
5. Bill of Materials
6. Schedule of Finishes
7. Technical Specifications
8. PERT-CPM

Section VII. Drawings

ANNEX - PROJECT LOCATION




Proposed STP location
FIRST STREET
3RD STREET
ADMIN BLDG
71
ROMMY MENDOZA


ALIGNMENT—1
LOT 122-E-1-D, PSD-03-003912
0 + 200
0 + 160
0 + 120
0 + 080
0 + 040
0 + 000
ProposedSTP Location

Section VIII. Bill of Quantities

Notes on the Bill of Quantities

Objectives

The objectives of the Bill of Quantities are:

a. to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and

b. when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Daywork Schedule

A Daywork Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Entity of the realism of rates quoted by the Bidders, the Daywork Schedule should normally comprise the following:

a. A list of the various classes of labor, materials, and Constructional Plant for which basic daywork rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a daywork basis.

b. Nominal quantities for each item of Daywork, to be priced by each Bidder at Daywork rates as Bid. The rate to be entered by the Bidder against each basic Daywork item should include the Contractor's profit, overheads, supervision, and other charges.

Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the SCC should state the manner in which they will be used, and under whose authority (usually the Procuring Entity's Representative's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities, attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc.

Signature Box

A signature box shall be added at the bottom of each page of the Bill of Quantities where the authorized representative of the Bidder shall affix his signature. Failure of the authorized representative to sign each and every page of the Bill of Quantities shall be a cause for rejection of his bid.

These Notes for Preparing a Bill of Quantities are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final documents.

	ITEM DESCRIPTION	QTY	UNIT	COST
A	GENERAL REQUIREMENTS			
	Mobilization / Demobilization	1	lot	
	Occupational Safety and Health Program, PPI	1	lot	
	Billboards, Signages			
	Site Preparation	1	lot	
	Provision for Temporary Facilities	1	lot	
	Permits and Clearances	1	lot	
B	PLANNING AND ENGINEERING DESIGN PHASE			
	Survey and Site Inspection	1	lot	
	Design	1	lot	
	Conceptual Plans	1	lot	
	Detailed Engineering Plans	1	lot	
C	CONSTRUCTION PHASE			
	Earthworks	1	lot	
	Hauling of Excavated Materials and Debris	1	lot	
	Excavation Works	1	lot	
	Civil Works	1	lot	
	Foundation	1	lot	
	Concreting Works	1	lot	
	Masonry Works	1	lot	
	Roofing Works	1	lot	
	Painting Works	1	lot	
	Ceiling Works	1	lot	
	Floor Finishing Works	1	lot	
	Doors, Windows, Hardware	1	lot	
	Electrical Works	1	lot	
	Roughing-ins	1	lot	
	Electrical System	1	lot	
	Lighting System	1	lot	
	Emergency System	1	lot	
	STP		lot	
	Combined Pre-Treatment	1		
	Secondary Treatment Dynamic SBR	1	lot	
	Post Treatment	1	lot	
	Sludge Management	1	lot	
	Chemical Dosing and Storage Facilities	1	lot	
	Control Room	1	lot	
	Electrical and Instrumentation	1	lot	
	Odor and Noise Control	1	lot	
D	TURNOVER			
	Start-Up, Testing and Commissioning	1	lot	
	Preparation of Operation and Maintenance Man	1	lot	
	Training of Sewage Treatment Plant Operators	1	lot	
	Proving Treatment Performance and Efficiency	1	lot	
	As-Built Detailed Plans	1	lot	

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);

or

☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;

and

☐ (c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;

and

☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

☐ (f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (g) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**

☐ (h) Philippine Contractors Accreditation Board (PCAB) License;

or

Special PCAB License in case of Joint Ventures;

and registration for the type and cost of the contract to be bid; **and**

☐ (i) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;

or

Original copy of Notarized Bid Securing Declaration; **and**

(j) Project Requirements, which shall include the following:

☐ a. Organizational chart for the contract to be bid;

☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;

☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**

☐ (k) Original duly signed Omnibus Sworn Statement (OSS);

and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**

☐ (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

☐ (n) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence; **or**
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (o) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

☐ (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**

☐ (q) Duly accomplished Detailed Estimates Form, including a summary shee indicating the unit prices of construction materials, labor rates, and equipmen rentals used in coming up with the Bid; **and**

☐ (r) Cash Flow by Quarter.

Republic of the Philippines
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Government Procurement Policy Board