

Republic of the Philippines
GENERAL MARIANO ALVAREZ WATER DISTRICT
Block 4, Lot 1, Congressional Road, Barangay Poblacion 2,
General Mariano Alvarez, Cavite

**CONSTRUCTION, SUPPLY, INSTALLATION,
COMMISSIONING AND PROCESS PROVING OF 15
CMD SEPTAGE TREATMENT PLANT AND SUPPLY
AND DELIVERY OF TWO (2) UNITS 3.5 CU.M.
CAPACITY SEPTAGE VACUUM TRUCKS**

January 2019

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Section I. Invitation to Bid

CONSTRUCTION, SUPPLY, INSTALLATION, COMMISSIONING and PROCESS PROVING of 15 CMD SEPTAGE TREATMENT PLANT and SUPPLY and DELIVERY of 2 UNITS 3.5 cu.m. CAPACITY SEPTAGE VACUUM TRUCKS

1. The ***General Mariano Alvarez Water District (GMAWD)***, through the GMAWD General fund, intends to apply the sum of *Fifty Million Pesos and 00/100 (Php 50,000,000.00)* being the Approved Budget for the Contract (ABC) to payments under the contract for ***Construction, Supply, Installation, Commissioning and Process Proving of 15 CMD Septage Treatment Plant and Supply and Delivery of Two (2) units 3.5 cu.m. Capacity Septage Vacuum Trucks / Contract 01-2019***. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. ***The General Mariano Alvarez Water District (GMAWD)***, now invites bids for ***Construction, Supply, Installation, Commissioning and Process Proving of 15 CMD Septage Treatment Plant and Supply and Delivery of 2 units 3.5 cu.m. Capacity Septage Vacuum Trucks. Completion of the Works is required within 300 days upon receipt of Notice to Proceed.*** Bidders should have completed at least One (1) completed contract similar to the Project and should have constructed a Compact Treatment Facility with less than Fifteen (15) cubic meter per day capacity. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II. Instruction to Bidders.
 - 2.1 Bidder shall have at least four (4) years of experience operating and maintaining a Stand-alone Septage Treatment Facility for a Philippine water district or local government unit running at full plant capacity with no unplanned downtimes, excluding preventive maintenance, as certified by the LGU/Water District.
 - 2.2 Bidders should have built the process system design in tandem with at least one project over the past four (4) years.
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 9184 (RA 9184), otherwise known as the “Government Procurement Reform Act.”

Bidding is restricted to Filipino citizens/sole proprietorships, cooperatives, and partnerships or organizations with at least seventy five percent (75%) interest or outstanding capital stock belonging to citizens of the Philippines.
4. Interested bidders may obtain further information from General Mariano Alvarez (GMA) Water District and inspect the Bidding Documents at the address given below from 8:00 am to 5:00 pm.

5. A complete set of Bidding Documents may be purchased by interested from the address below and upon payment of a nonrefundable fee for the Bidding Documents in the amount of *Twenty Five Thousand Pesos (Php 25,000.00)*.
6. GMAWD intends to limit the Pre-Bid Conference to Bidders *who have purchased the Bidding Documents*.

The *GMA Water District* will hold a Pre-Bid Conference on **February 8, 2019 (Friday) 2:00 pm GMAWD Office Annex Building 3rd Floor. Block 4 Lot 1 Congressional Road, Barangay Poblacion 2, GMA, Cavite. The Pre-bid conference** shall be open only to all interested parties who have purchased the Bidding Documents.

7. Bids must be delivered to the address below on or before **February 22, 2019, 1:00 pm GMAWD Office - Annex Building at its 3rd Floor**. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 18. Bids will be opened in the presence of the bidders' representatives who choose to attend at the address below. Late bids shall not be accepted.
8. A **"TWO ENVELOPE"** system shall be adopted in the tendering. The *first bid envelope shall contain the qualification & eligibility documents and technical proposal*. The *second envelope will contain the financial offer*.

9. SCHEDULE OF BIDDING ACTIVITIES:

a.	Posting at G-EPS	January 2, 2019
b.	Submission of Letter of Intent together with company profile	January 7 – January 11, 2019
c.	Issuance and Availability of Eligibility and Bidding Documents	January 21 – January 25, 2019
d.	Pre-Bid Conference	February 8, 2019 @ 2:00pm- GMAWD Annex 3 rd Floor
e.	Deadline of Submission Eligibility & Bid Documents	February 22, 2019 @ 1:00pm- GMAWD Annex 3 rd Floor
f.	Opening of Eligibility & Bids	February 22, 2019 @ 2:00pm – GMAWD Annex 3 rd Floor

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

11. For further information, please refer to:

***Leonilo L. Laborte / Julius P. Abellanosa
BAC Secretariat***

***Block 4 Lot 1, Congressional Road, Barangay Poblacion 2, GMA, Cavite
046-460-4645, 4117(municipality code)
gmawaterdistrict@yahoo.co.in
Fax no. 046-460-4645***

Section II. Instructions to Bidders

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A. General

1. Scope of Bid

- 1.1. The Procuring Entity named in the **BDS**, invites bids for the construction of Works, as described in Section VI. Specifications.
- 1.2. The name, identification, and number of lots specific to this bidding are provided in the **BDS**. The contracting strategy and basis of evaluation of lots is described in **ITB** Clause 27.
- 1.3. The successful Bidder will be expected to complete the Works by the intended completion date specified in **SCC** Clause 1.17.

2. Source of Funds

The Procuring Entity has a budget or received funds from the Funding Source named in the **BDS**, and in the amount indicated in the **BDS**. It intends to apply part of the funds received for the Project, as defined in the **BDS**, to cover eligible payments under the Contract for the Works.

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

- 3.1. Unless otherwise specified in the **BDS**, the Procuring Entity, as well as bidders and contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. In pursuance of this policy, the Funding Source:
 - (a) defines, for purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves, others, or induce others to do so, by misusing the position in which they are placed, and includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; entering, on behalf of the Procuring Entity, into any contract or transaction manifestly and grossly disadvantageous to the same, whether or not the public officer profited or will profit thereby, and similar acts as provided in Republic Act 3019;
 - (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Procuring Entity, and includes collusive practices among Bidders (prior to or after Bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the Procuring Entity of the benefits of free and open competition;

- (iii) “collusive practices” means a scheme or arrangement between two or more Bidders, with or without the knowledge of the Procuring Entity, designed to establish bid prices at artificial, non-competitive levels; and
 - (iv) “coercive practices” means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;
 - (v) “obstructive practice” is
 - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to an administrative proceedings or investigation or making false statements to investigators in order to materially impede an administrative proceedings or investigation of the Procuring Entity or any foreign government/foreign or international financing institution into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the administrative proceedings or investigation or from pursuing such proceedings or investigation; or
 - (bb) acts intended to materially impede the exercise of the inspection and audit rights of the Procuring Entity or any foreign government/foreign or international financing institution herein.
 - (b) will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract; and
 - (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded Contract funded by the Funding Source if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing or, or in executing, a Contract funded by the Funding Source.
- 3.2. Further, the Procuring Entity will seek to impose the maximum civil, administrative, and/or criminal penalties available under the applicable laws on individuals and organizations deemed to be involved in any of the practices mentioned in **ITB** Clause 3.1(a).
- 3.3. Furthermore, the Funding Source and the Procuring Entity reserve the right to inspect and audit records and accounts of a contractor in the bidding for and performance of a contract themselves or through independent auditors as reflected in the **GCC** Clause 34.

4. Conflict of Interest

4.1. All Bidders found to have conflicting interests shall be disqualified to participate in the procurement at hand, without prejudice to the imposition of appropriate administrative, civil, and criminal sanctions. A Bidder may be considered to have conflicting interests with another Bidder in any of the events described in paragraphs (a) through (c) and a general conflict of interest in any of the circumstances set out in paragraphs (d) through (g) below:

- (a) A Bidder has controlling shareholders in common with another Bidder;
- (b) A Bidder receives or has received any direct or indirect subsidy from any other Bidder;
- (c) A Bidder has the same legal representative as that of another Bidder for purposes of this Bid;
- (d) A Bidder has a relationship, directly or through third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder or influence the decisions of the Procuring Entity regarding this bidding process;
- (e) A Bidder submits more than one bid in this bidding process. However, this does not limit the participation of subcontractors in more than one bid;
- (f) A Bidder who participated as a consultant in the preparation of the design or technical specifications of the goods and related services that are the subject of the bid; or
- (g) A Bidder who lends, or temporarily seconds, its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for or implementation of the project, if the personnel would be involved in any capacity on the same project.

4.2. In accordance with Section 47 of the IRR of RA 9184, all Bidding Documents shall be accompanied by a sworn affidavit of the Bidder that it is not related to the Head of the Procuring Entity (HoPE), members of the Bids and Awards Committee (BAC), members of the Technical Working Group (TWG), members of the BAC Secretariat, the head of the Project Management Office (PMO) or the end-user unit, and the project consultants, by consanguinity or affinity up to the third civil degree. On the part of the Bidder, this Clause shall apply to the following persons:

- (a) If the Bidder is an individual or a sole proprietorship, to the Bidder himself;
- (b) If the Bidder is a partnership, to all its officers and members;

- (c) If the Bidder is a corporation, to all its officers, directors, and controlling stockholders;
- (d) If the Bidder is a cooperative, to all its officers, directors, and controlling shareholders or members; and
- (e) If the Bidder is a joint venture (JV), the provisions of items (a), (b), (c) or (d) of this Clause shall correspondingly apply to each of the members of the said JV, as may be appropriate.

Relationship of the nature described above or failure to comply with this Clause will result in the automatic disqualification of a Bidder.

5. Eligible Bidders

5.1. Unless otherwise indicated in the **BDS**, the following persons shall be eligible to participate in this Bidding:

- (a) Duly licensed Filipino citizens/sole proprietorships;
- (b) Partnerships duly organized under the laws of the Philippines and of which at least seventy five percent (75%) of the interest belongs to citizens of the Philippines;
- (c) Corporations duly organized under the laws of the Philippines, and of which at least seventy five percent (75%) of the outstanding capital stock belongs to citizens of the Philippines;
- (d) Cooperatives duly organized under the laws of the Philippines.
- (e) Persons/entities forming themselves into a JV, i.e., a group of two (2) or more persons/entities that intend to be jointly and severally responsible or liable for a particular contract: Provided, however, that, in accordance with Letter of Instructions No. 630, Filipino ownership or interest of the joint venture concerned shall be at least seventy five percent (75%): Provided, further, that joint ventures in which Filipino ownership or interest is less than seventy five percent (75%) may be eligible where the structures to be built require the application of techniques and/or technologies which are not adequately possessed by a person/entity meeting the seventy five percent (75%) Filipino ownership requirement: Provided, finally, that in the latter case, Filipino ownership or interest shall not be less than twenty five percent (25%). For this purpose, Filipino ownership or interest shall be based on the contributions of each of the members of the joint venture as specified in their JVA.

5.2. The Procuring Entity may also invite foreign bidders when provided for under any Treaty or International or Executive Agreement as specified in the **BDS**.

5.3. Government owned or controlled corporations (GOCCs) may be eligible to participate only if they can establish that they (a) are legally and financially

autonomous, (b) operate under commercial law, and (c) are not attached agencies of the Procuring Entity.

- 5.4. (a) 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 Philippine Statistics Authority (PSA) consumer price index. However, contractors under Small A and Small B categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB.

(b) 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 **BDS**.

For this purpose, contracts similar to the Project shall be those described in the **BDS**.

- 5.5. The Bidder must submit a computation of its Net Financial Contracting Capacity (NFCC), which must be at least equal to the ABC to be bid, calculated as follows:

$NFCC = [(Current\ assets\ minus\ current\ liabilities)\ (15)]\ minus\ the\ value\ of\ all\ outstanding\ or\ uncompleted\ portions\ of\ the\ projects\ under\ ongoing\ contracts,\ including\ awarded\ contracts\ yet\ to\ be\ started\ coinciding\ with\ the\ contract\ for\ this\ Project.$

The values of the domestic bidder's current assets and current liabilities shall be based on the latest Audited Financial Statements (AFS) submitted to the BIR.

For purposes of computing the foreign bidders' NFCC, the value of the current assets and current liabilities shall be based on their audited financial statements prepared in accordance with international financial reporting standards.

6. Bidder's Responsibilities

- 6.1. The Bidder or its duly authorized representative shall submit a sworn statement in the form prescribed in Section IX. Bidding Forms as required in **ITB** Clause 12.1(b)(iii).

- 6.2. The Bidder is responsible for the following:

- (a) Having taken steps to carefully examine all of the Bidding Documents;
- (b) Having acknowledged all conditions, local or otherwise, affecting the implementation of the contract;

- (c) Having made an estimate of the facilities available and needed for the contract to be bid, if any;
- (d) Having complied with its responsibility to inquire or secure Supplemental/Bid Bulletin/s as provided under **ITB** Clause 10.4.
- (e) Ensuring that it is not “blacklisted” or barred from bidding by the GoP or any of its agencies, offices, corporations, or LGUs, including foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the GPPB;
- (f) Ensuring that each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;
- (g) Authorizing the HoPE or its duly authorized representative/s to verify all the documents submitted;
- (h) Ensuring that the signatory is the duly authorized representative of the Bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract, accompanied by the duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary’s Certificate, whichever is applicable;
- (i) Complying with the disclosure provision under Section 47 of RA 9184 and its IRR in relation to other provisions of RA 3019;
- (j) Complying with existing labor laws and standards, in the case of procurement of services. Moreover, bidder undertakes to:
 - (i) Ensure the entitlement of workers to wages, hours of work, safety and health and other prevailing conditions of work as established by national laws, rules and regulations; or collective bargaining agreement; or arbitration award, if and when applicable.

 In case there is a finding by the Procuring Entity or the DOLE of underpayment or non-payment of workers’ wage and wage-related benefits, bidder agrees that the performance security or portion of the contract amount shall be withheld in favor of the complaining workers pursuant to appropriate provisions of Republic Act No. 9184 without prejudice to the institution of appropriate actions under the Labor Code, as amended, and other social legislations.
 - (ii) Comply with occupational safety and health standards and to correct deficiencies, if any.

In case of imminent danger, injury or death of the worker, bidder undertakes to suspend contract implementation pending clearance to proceed from the DOLE Regional Office and to comply with Work Stoppage Order; and

- (iii) Inform the workers of their conditions of work, labor clauses under the contract specifying wages, hours of work and other benefits under prevailing national laws, rules and regulations; or collective bargaining agreement; or arbitration award, if and when applicable, through posting in two (2) conspicuous places in the establishment's premises; and
- (k) Ensuring that it did not give or pay, directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the;

Failure to observe any of the above responsibilities shall be at the risk of the Bidder concerned.

- 6.3. The Bidder, by the act of submitting its bid, shall be deemed to have inspected the site, determined the general characteristics of the contract works and the conditions for this Project and examine all instructions, forms, terms, and project requirements in the Bidding Documents.
- 6.4. It shall be the sole responsibility of the prospective bidder to determine and to satisfy itself by such means as it considers necessary or desirable as to all matters pertaining to this Project, including: (a) the location and the nature of the contract, project, or 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.
- 6.5. The Procuring Entity shall not assume any responsibility regarding erroneous interpretations or conclusions by the prospective or eligible bidder out of the data furnished by the procuring entity. However, the Procuring Entity shall ensure that all information in the Bidding Documents, including supplemental/bid bulletins issued are correct and consistent.
- 6.6. Before submitting their bids, the Bidders are deemed to have become familiar with all existing laws, decrees, ordinances, acts and regulations of the Philippines which may affect the contract in any way.
- 6.7. The Bidder shall bear all costs associated with the preparation and submission of his bid, and the Procuring Entity will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 6.8. The Bidder should note that the Procuring Entity will accept bids only from those that have paid the applicable fee for the Bidding Documents at the office indicated in the Invitation to Bid.

7. Origin of Goods and Services

There is no restriction on the origin of Goods, or Contracting of Works or Services other than those prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

8. Subcontracts

- 8.1. Unless otherwise specified in the **BDS**, the Bidder may subcontract portions of the Works to an extent as may be approved by the Procuring Entity and stated in the **BDS**. However, subcontracting of any portion shall not relieve the Bidder from any liability or obligation that may arise from the contract for this Project.
- 8.2. Subcontractors must submit the documentary requirements under **ITB** Clause 12 and comply with the eligibility criteria specified in the **BDS**. In the event that any subcontractor is found by the Procuring Entity to be ineligible, the subcontracting of such portion of the Works shall be disallowed.
- 8.3. The Bidder may identify the subcontractor to whom a portion of the Works will be subcontracted at any stage of the bidding process or during contract implementation. If the Bidder opts to disclose the name of the subcontractor during bid submission, the Bidder shall include the required documents as part of the technical component of its bid.

B. Contents of Bidding Documents

9. Pre-Bid Conference

- 9.1. (a) If so specified in the **BDS**, a pre-bid conference shall be held at the venue and on the date indicated therein, to clarify and address the Bidders' questions on the technical and financial components of this Project.

(b) The pre-bid conference shall be held at least twelve (12) calendar days before the deadline for the submission of and receipt of bids, but not earlier than seven (7) calendar days from the posting of the Invitation to Bid/Bidding Documents in the PhilGEPS website. If the Procuring Entity determines that, by reason of the method, nature, or complexity of the contract to be bid, or when international participation will be more advantageous to the GoP, a longer period for the preparation of bids is necessary, the pre-bid conference shall be held at least thirty (30) calendar days before the deadline for the submission and receipt of bids, as specified in the **BDS**.
- 9.2. Bidders are encouraged to attend the pre-bid conference to ensure that they fully understand the Procuring Entity's requirements. Non-attendance of the Bidder will in no way prejudice its bid; however, the Bidder is expected to know the changes and/or amendments to the Bidding Documents as recorded in the minutes of the pre-bid conference and the Supplemental/Bid Bulletin. The minutes of the pre-bid conference shall be recorded and prepared not later than five (5) calendar days after the pre-bid conference. The minutes shall be

made available to prospective bidders not later than five (5) days upon written request.

- 9.3. Decisions of the BAC amending any provision of the bidding documents shall be issued in writing through a Supplemental/Bid Bulletin at least seven (7) calendar days before the deadline for the submission and receipt of bids.

10. Clarification and Amendment of Bidding Documents

- 10.1. Prospective bidders may request for clarification(s) on and/or interpretation of any part of the Bidding Documents. Such a request must be in writing and submitted to the Procuring Entity at the address indicated in the **BDS** at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.
- 10.2. The BAC shall respond to the said request by issuing a Supplemental/Bid Bulletin, to be made available to all those who have properly secured the Bidding Documents, at least seven (7) calendar days before the deadline for the submission and receipt of Bids.
- 10.3. Supplemental/Bid Bulletins may also be issued upon the Procuring Entity's initiative for purposes of clarifying or modifying any provision of the Bidding Documents not later than seven (7) calendar days before the deadline for the submission and receipt of Bids. Any modification to the Bidding Documents shall be identified as an amendment.
- 10.4. Any Supplemental/Bid Bulletin issued by the BAC shall also be posted in the PhilGEPS and the website of the Procuring Entity concerned, if available, and at any conspicuous place in the premises of the Procuring Entity concerned. It shall be the responsibility of all Bidders who have properly secured the Bidding Documents to inquire and secure Supplemental/Bid Bulletins that may be issued by the BAC. However, Bidders who have submitted bids before the issuance of the Supplemental/Bid Bulletin must be informed and allowed to modify or withdraw their bids in accordance with **ITB** Clause 23.

C. Preparation of Bids

11. Language of Bids

The eligibility requirements or statements, the bids, and all other documents to be submitted to the BAC must be in English. If the eligibility requirements or statements, the bids, and all other documents submitted to the BAC are in foreign language other than English, it must be accompanied by a translation of the documents in English. The documents shall be translated by the relevant foreign government agency, the foreign government agency authorized to translate documents, or a registered translator in the foreign bidder's country; and 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. The English translation shall govern, for purposes of interpretation of the bid.

12. Documents Comprising the Bid: Eligibility and Technical Components

12.1. Unless otherwise indicated in the **BDS**, the first envelope shall contain the following eligibility and technical documents:

(a) Eligibility Documents –

Class “A” Documents

- (i) PhilGEPS Certificate of Registration and Membership in accordance with Section 8.5.2 of the IRR, except for foreign bidders participating in the procurement by a Philippine Foreign Service Office or Post, which shall submit their eligibility documents under Section 23.1 of the IRR, provided, that the winning bidder shall register with the PhilGEPS in accordance with Section 37.1.4 of the IRR;
- (ii) Statement 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

Statement of the Bidder’s SLCC similar to the contract to be bid, in accordance with ITB Clause 5.4.

The two statements required shall indicate for each contract the following:

- (ii.1) name of the contract;
- (ii.2) date of the contract;
- (ii.3) contract duration;
- (ii.4) owner’s name and address;
- (ii.5) nature of work;
- (ii.6) contractor’s role (whether sole contractor, subcontractor, or partner in a JV) and percentage of participation;
- (ii.7) total contract value at award;
- (ii.8) date of completion or estimated completion time;
- (ii.9) total contract value at completion, if applicable;
- (ii.10) percentages of planned and actual accomplishments, if applicable; and

(ii.11) value of outstanding works, if applicable.

The statement of the Bidder's SLCC shall be supported by the Notice of Award and/or Notice to Proceed, Project Owner's Certificate of Final Acceptance issued by the Owner other than the Contractor or the Constructors Performance Evaluation System (CPES) Final Rating, which must be at least satisfactory. In case of contracts with the private sector, an equivalent document shall be submitted;

- (iii) Unless otherwise provided in the **BDS**, a valid special PCAB License in case of joint ventures, and registration for the type and cost of the contract for this Project; and
- (iv) NFCC computation in accordance with ITB Clause 5.5.

Class "B" Documents

- (v) If applicable, Joint Venture Agreement (JVA) in accordance with RA 4566.
- (b) Technical Documents –
- (i) Bid security in accordance with **ITB** Clause 18. If the Bidder opts to submit the bid security in the form of:
 - (i.1) a bank draft/guarantee or an irrevocable letter of credit issued by a foreign bank, it shall be accompanied by a confirmation from a Universal or Commercial Bank; or
 - (i.2) a surety bond accompanied by a certification coming from the Insurance Commission that the surety or insurance company is authorized to issue such instruments.
 - (ii) Project Requirements, which shall include the following:
 - (ii.1) Organizational chart for the contract to be bid;
 - (ii.2) List of contractor's 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. These personnel must meet the required minimum years of experience set in the **BDS**; and
 - (ii.3) 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, which must meet the minimum requirements for the contract set in the **BDS**; and

- (iii) Sworn statement in accordance with Section 25.3 of the IRR of RA 9184 and using the form prescribed in Section IX. Bidding Forms.

13. Documents Comprising the Bid: Financial Component

13.1. Unless otherwise stated in the **BDS**, the financial component of the bid shall contain the following:

- (a) Financial Bid Form, which includes bid prices and the bill of quantities, in accordance with **ITB** Clauses 15.1 and 15.3; and
- (b) Any other document related to the financial component of the bid as stated in the **BDS**.

13.2. (a) Unless otherwise stated in the **BDS**, all Bids that exceed the ABC shall not be accepted.

- (b) Unless otherwise indicated in the **BDS**, for foreign-funded procurement, a ceiling may be applied to bid prices provided the following conditions are met:

- (i) Bidding Documents are obtainable free of charge on a freely accessible website. If payment of Bidding Documents is required by the procuring entity, payment could be made upon the submission of bids.
- (ii) The procuring entity has procedures in place to ensure that the ABC is based on recent estimates made by the engineer or the responsible unit of the procuring entity and that the estimates are based on adequate detailed engineering (in the case of infrastructure projects) and reflect the quality, supervision and risk and inflationary factors, as well as prevailing market prices, associated with the types of works or goods to be procured.
- (iii) The procuring entity has trained cost estimators on estimating prices and analyzing bid variances. In the case of infrastructure projects, the procuring entity must also have trained quantity surveyors.
- (iv) The procuring entity has established a system to monitor and report bid prices relative to ABC and engineer's/procuring entity's estimate.
- (v) The procuring entity has established a monitoring and evaluation system for contract implementation to provide a feedback on actual total costs of goods and works.

14. Alternative Bids

- 14.1. Alternative Bids shall be rejected. For this purpose, alternative bid is an offer made by a Bidder in addition or as a substitute to its original bid which may be included as part of its original bid or submitted separately therewith for purposes of bidding. A bid with options is considered an alternative bid regardless of whether said bid proposal is contained in a single envelope or submitted in two (2) or more separate bid envelopes.
- 14.2. 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.
- 14.3. Each Bidder shall submit only one Bid, either individually or as a partner in a JV. A Bidder who submits or participates in more than one bid (other than as a subcontractor if a subcontractor is permitted to participate in more than one bid) will cause all the proposals with the Bidder's participation to be disqualified. This shall be without prejudice to any applicable criminal, civil and administrative penalties that may be imposed upon the persons and entities concerned.

15. Bid Prices

- 15.1. The contract shall be for the whole Works, as described in **ITB** Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.
- 15.2. The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Bids not addressing or providing all of the required items in the Bidding Documents including, where applicable, Bill of Quantities, shall be considered non-responsive and, thus, automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a zero (0) or a dash (-) for the said item would mean that it is being offered for free to the Government, except those required by law or regulations to be provided for.
- 15.3. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, prior to the deadline for submission of bids, shall be included in the rates, prices, and total bid price submitted by the Bidder.
- 15.4. All bid prices for the given scope of work in the contract as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as specified in GCC Clause 48. Upon the recommendation of the Procuring Entity, price escalation may be allowed in extraordinary circumstances as may be determined by the National Economic and Development Authority in accordance with the Civil Code of the Philippines, and upon approval by the GPPB. Furthermore, in cases where the cost of the awarded contract is affected by any applicable new laws, ordinances, regulations, or other acts of

the GoP, promulgated after the date of bid opening, a contract price adjustment shall be made or appropriate relief shall be applied on a no loss-no gain basis.

16. Bid Currencies

- 16.1. All bid prices shall be quoted in Philippine Pesos unless otherwise provided in the **BDS**. However, for purposes of bid evaluation, bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate prevailing on the day of the Bid Opening.
- 16.2. If so allowed in accordance with **ITB** Clause 16.1, the Procuring Entity for purposes of bid evaluation and comparing the bid prices will convert the amounts in various currencies in which the bid price is expressed to Philippine Pesos at the exchange rate as published in the *Bangko Sentral ng Pilipinas* (BSP) reference rate bulletin on the day of the bid opening.
- 16.3. Unless otherwise specified in the **BDS**, payment of the contract price shall be made in Philippine Pesos.

17. Bid Validity

- 17.1. Bids shall remain valid for the period specified in the **BDS** which shall not exceed one hundred twenty (120) calendar days from the date of the opening of bids.
- 17.2. In exceptional circumstances, prior to the expiration of the bid validity period, the Procuring Entity may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. The bid security described in **ITB** Clause 18 should also be extended corresponding to the extension of the bid validity period at the least. A Bidder may refuse the request without forfeiting its bid security, but his bid shall no longer be considered for further evaluation and award. A Bidder granting the request shall not be required or permitted to modify its bid.

18. Bid Security

- 18.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in an amount stated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the following schedule:

Form of Bid Security	Amount of Bid Security (Not less than the Percentage of the ABC)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank. <i>For biddings conducted by LGUs, the cashier's/manager's check may be issued by other</i>	Two percent (2%)

<p><i>banks certified by the BSP as authorized to issue such financial instrument.</i></p>	
<p>(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.</p> <p><i>For biddings conducted by LGUs, the Bank Draft/Guarantee, or irrevocable letter of credit may be issued by other banks certified by the BSP as authorized to issue such financial instrument.</i></p>	
<p>(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or</p>	<p>Five percent (5%)</p>

The Bid Securing Declaration mentioned above is an undertaking which states, among others, that the Bidder shall enter into contract with the procuring entity and furnish the performance security required under ITB Clause 32.2, within ten (10) calendar days from receipt of the Notice of Award, and commits to pay the corresponding amount as fine, and be suspended for a period of time from being qualified to participate in any government procurement activity in the event it violates any of the conditions stated therein as provided in the guidelines issued by the GPPB.

- 18.2. The bid security should be valid for the period specified in the **BDS**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.
- 18.3. No bid securities shall be returned to Bidders after the opening of bids and before contract signing, except to those that failed or declared as post-disqualified, upon submission of a written waiver of their right to file a request for reconsideration and/or protest, or lapse of the reglementary period without having filed a request for reconsideration or protest. Without prejudice on its forfeiture, Bid Securities shall be returned only after the Bidder with the Lowest Calculated Responsive Bid (LCRB) has signed the contract and furnished the Performance Security, but in no case later than the expiration of the Bid Security validity period indicated in **ITB** Clause 18.2.

- 18.4. Upon signing and execution of the contract, pursuant to **ITB** Clause 31, and the posting of the performance security, pursuant to **ITB** Clause 32, the successful Bidder's Bid Security will be discharged, but in no case later than the Bid Security validity period as indicated in **ITB** Clause 18.2.
- 18.5. The bid security may be forfeited:
- (a) if a Bidder:
 - (i) withdraws its bid during the period of bid validity specified in **ITB** Clause 17;
 - (ii) does not accept the correction of errors pursuant to **ITB** Clause 27.3(b);
 - (iii) has a finding against the veracity of the required documents submitted in accordance with **ITB** Clause 28.2;
 - (iv) submission of eligibility requirements containing false information or falsified documents;
 - (v) submission of bids that contain false information or falsified documents, or the concealment of such information in the bids in order to influence the outcome of eligibility screening or any other stage of the public bidding;
 - (vi) allowing the use of one's name, or using the name of another for purposes of public bidding;
 - (vii) withdrawal of a bid, or refusal to accept an award, or enter into contract with the Government without justifiable cause, after the Bidder had been adjudged as having submitted the LCRB;
 - (viii) refusal or failure to post the required performance security within the prescribed time;
 - (ix) refusal to clarify or validate in writing its bid during post-qualification within a period of seven (7) calendar days from receipt of the request for clarification;
 - (x) any documented attempt by a Bidder to unduly influence the outcome of the bidding in his favor;
 - (xi) failure of the potential joint venture partners to enter into the joint venture after the bid is declared successful; or
 - (xii) all other acts that tend to defeat the purpose of the competitive bidding, such as habitually withdrawing from bidding, submitting late Bids or patently insufficient bid, for at least three (3) times within a year, except for valid reasons.

- (b) if the successful Bidder:
 - (i) fails to sign the contract in accordance with **ITB** Clause 31;
 - (ii) fails to furnish performance security in accordance with **ITB** Clause 32.

19. Format and Signing of Bids

- 19.1 Bidders shall submit their bids through their duly authorized representative using the appropriate forms provided in Section IX. Bidding Forms on or before the deadline specified in the **ITB** Clause 21 in two (2) separate sealed bid envelopes, and which shall be submitted simultaneously. The first shall contain the technical component of the bid, including the eligibility requirements under **ITB** Clause 12.1, and the second shall contain the financial component of the bid. This shall also be observed for each lot in the case of lot procurement.
- 19.2 Forms as mentioned in **ITB** Clause 19.1 must be completed without any alterations to their format, and no substitute form shall be accepted. All blank spaces shall be filled in with the information requested.
- 19.3 The Bidder shall prepare and submit an original of the first and second envelopes as described in **ITB** Clauses 12 and 13. In addition, the Bidder shall submit copies of the first and second envelopes. In the event of any discrepancy between the original and the copies, the original shall prevail.
- 19.4 Each and every page of the Bid Form, including the Bill of Quantities, under Section IX hereof, shall be signed by the duly authorized representative/s of the Bidder. Failure to do so shall be a ground for the rejection of the bid.
- 19.5 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the duly authorized representative/s of the Bidder.

20. Sealing and Marking of Bids

- 20.1. Bidders shall enclose their original eligibility and technical documents described in **ITB** Clause 12, in one sealed envelope marked “ORIGINAL - TECHNICAL COMPONENT,” and the original of their financial component in another sealed envelope marked “ORIGINAL - FINANCIAL COMPONENT,” sealing them all in an outer envelope marked “ORIGINAL BID.”
- 20.2. Each copy of the first and second envelopes shall be similarly sealed duly marking the inner envelopes as “COPY NO. ___ - TECHNICAL COMPONENT” and “COPY NO. ___ – FINANCIAL COMPONENT” and the outer envelope as “COPY NO. ___,” respectively. These envelopes containing the original and the copies shall then be enclosed in one single envelope.

- 20.3. The original and the number of copies of the bid as indicated in the **BDS** shall be typed or written in ink and shall be signed by the Bidder or its duly authorized representative/s.
- 20.4. All envelopes shall:
- (a) contain the name of the contract to be bid in capital letters;
 - (b) bear the name and address of the Bidder in capital letters;
 - (c) be addressed to the Procuring Entity's BAC in accordance with **ITB** Clause 20.1;
 - (d) bear the specific identification of this bidding process indicated in the **ITB** Clause 1.2; and
 - (e) bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of bids, in accordance with **ITB** Clause 21.
- 20.5. Bid envelopes that are not properly sealed and marked, as required in the bidding documents, shall not be rejected, but the Bidder or its duly authorized representative shall acknowledge such condition of the bid as submitted. The BAC or the Procuring Entity shall assume no responsibility for the misplacement of the contents of the improperly sealed or marked bid, or for its premature opening.

D. Submission and Opening of Bids

21. Deadline for Submission of Bids

Bids must be received by the Procuring Entity's BAC at the address and on or before the date and time indicated in the **BDS**.

22. Late Bids

Any bid submitted after the deadline for submission and receipt of bids prescribed by the Procuring Entity, pursuant to **ITB** Clause 21, shall be declared "Late" and shall not be accepted by the Procuring Entity. The BAC shall record in the minutes of Bid Submission and Opening, the Bidder's name, its representative and the time the late bid was submitted.

23. Modification and Withdrawal of Bids

23.1. The Bidder may modify its bid after it has been submitted; provided that the modification is received by the Procuring Entity prior to the deadline prescribed for submission and receipt of bids. The Bidder shall not be allowed to retrieve its original bid, but shall be allowed to submit another bid equally sealed and properly identified in accordance with Clause 20, linked to its original bid marked as "TECHNICAL MODIFICATION" or "FINANCIAL MODIFICATION" and stamped "received" by the BAC. Bid modifications

received after the applicable deadline shall not be considered and shall be returned to the Bidder unopened.

- 23.2. A Bidder may, through a Letter of Withdrawal, withdraw its bid after it has been submitted, for valid and justifiable reason; provided that the Letter of Withdrawal is received by the Procuring Entity prior to the deadline prescribed for submission and receipt of bids. The Letter of Withdrawal must be executed by the authorized representative of the Bidder identified in the Omnibus Sworn Statement, a copy of which should be attached to the letter.
- 23.3. Bids requested to be withdrawn in accordance with **ITB** Clause 23.1 shall be returned unopened to the Bidders. A Bidder, who has acquired the bidding documents may also express its intention not to participate in the bidding through a letter which should reach and be stamped by the BAC before the deadline for submission and receipt of bids. A Bidder that withdraws its bid shall not be permitted to submit another bid, directly or indirectly, for the same contract.
- 23.4. No bid may be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Financial Bid Form. Withdrawal of a bid during this interval shall result in the forfeiture of the Bidder's bid security, pursuant to **ITB** Clause 18.5, and the imposition of administrative, civil, and criminal sanctions as prescribed by RA 9184 and its IRR.

24. Opening and Preliminary Examination of Bids

- 24.1. The BAC shall open the Bids in public, immediately after the deadline for the submission and receipt of bids in public, as specified in the **BDS**. In case the Bids cannot be opened as scheduled due to justifiable reasons, the BAC shall take custody of the Bids submitted and reschedule the opening of Bids on the next working day or at the soonest possible time through the issuance of a Notice of Postponement to be posted in the PhilGEPS website and the website of the Procuring Entity concerned.
- 24.2. Unless otherwise specified in the BDS, the BAC shall open the first bid envelopes and determine each Bidder's compliance with the documents prescribed in ITB Clause 12, using a non-discretionary "pass/fail" criterion. If a Bidder submits the required document, it shall be rated "passed" for that particular requirement. In this regard, bids that fail to include any requirement or are incomplete or patently insufficient shall be considered as "failed". Otherwise, the BAC shall rate the said first bid envelope as "passed".
- 24.3. Unless otherwise specified in the **BDS**, immediately after determining compliance with the requirements in the first envelope, the BAC shall forthwith open the second bid envelope of each remaining eligible Bidder whose first bid envelope was rated "passed." The second envelope of each complying Bidder shall be opened within the same day. In case one or more of the requirements in the second envelope of a particular bid is missing, incomplete or patently insufficient, and/or if the submitted total bid price

exceeds the ABC unless otherwise provided in **ITB** Clause 13.2, the BAC shall rate the bid concerned as “failed.” Only bids that are determined to contain all the bid requirements for both components shall be rated “passed” and shall immediately be considered for evaluation and comparison.

- 24.4. Letters of Withdrawal shall be read out and recorded during bid opening, and the envelope containing the corresponding withdrawn bid shall be returned to the Bidder unopened.
- 24.5. All members of the BAC who are present during bid opening shall initial every page of the original copies of all bids received and opened.
- 24.6. In the case of an eligible foreign bidder as described in **ITB** Clause 5, the following Class “A” Documents may be substituted with the appropriate equivalent documents, if any, issued by the country of the foreign bidder concerned, which shall likewise be uploaded and maintained in the PhilGEPS in accordance with Section 8.5.2 of the IRR.:
 - a) Registration certificate from the Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or CDA for cooperatives;
 - b) Mayor’s/Business permit issued by the local government where the principal place of business of the Bidder is located; and
 - c) Audited Financial Statements showing, among others, the prospective Bidder’s total and current assets and liabilities stamped “received” by the Bureau of Internal Revenue or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two years from the date of bid submission.
- 24.7. Each partner of a joint venture agreement shall likewise submit the document required in **ITB** Clause 12.1(a)(i). Submission of documents required under **ITB** Clauses 12.1(a)(ii) to 12.1(a)(iv) by any of the joint venture partners constitutes compliance.
- 24.8. The Procuring Entity shall prepare the minutes of the proceedings of the bid opening that shall include, as a minimum: (a) names of Bidders, their bid price (per lot, if applicable, and/or including discount, if any), bid security, findings of preliminary examination, and whether there is a withdrawal or modification; and (b) attendance sheet. The BAC members shall sign the abstract of bids as read.
- 24.8. The Bidders or their duly authorized representatives may attend the opening of bids. The BAC shall ensure the integrity, security, and confidentiality of all submitted bids. The Abstract of Bids as read and the minutes of the Bid Opening shall be made available to the public upon written request and payment of a specified fee to recover cost of materials.
- 24.9. To ensure transparency and accurate representation of the bid submission, the BAC Secretariat shall notify in writing all Bidders whose bids it has received

through its PhilGEPS-registered physical address or official e-mail address. The notice shall be issued within seven (7) calendar days from the date of the bid opening.

E. Evaluation and Comparison of Bids

25. Process to be Confidential

- 25.1. Members of the BAC, including its staff and personnel, as well as its Secretariat and TWG, are prohibited from making or accepting any kind of communication with any Bidder regarding the evaluation of their bids until the issuance of the Notice of Award, unless otherwise allowed in the case of **ITB** Clause 26.
- 25.2. Any effort by a Bidder to influence the Procuring Entity in the Procuring Entity's decision in respect of bid evaluation, bid comparison or contract award will result in the rejection of the Bidder's bid.

26. Clarification of Bids

To assist in the evaluation, comparison and post-qualification of the bids, the Procuring Entity may ask in writing any Bidder for a clarification of its bid. All responses to requests for clarification shall be in writing. Any clarification submitted by a Bidder in respect to its bid and that is not in response to a request by the Procuring Entity shall not be considered

27. Detailed Evaluation and Comparison of Bids

- 27.1. The Procuring Entity will undertake the detailed evaluation and comparison of Bids which have passed the opening and preliminary examination of Bids, pursuant to **ITB** Clause 24, in order to determine the Lowest Calculated Bid.
- 27.2. The Lowest Calculated Bid shall be determined in two steps:
 - (a) The detailed evaluation of the financial component of the bids, to establish the correct calculated prices of the bids; and
 - (b) The ranking of the total bid prices as so calculated from the lowest to highest. The bid with the lowest price shall be identified as the Lowest Calculated Bid.
- 27.3. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all bids rated "passed," using non-discretionary "pass/fail" criterion. The BAC shall consider the following in the evaluation of bids:
 - (a) Completeness of the bid. Unless the **BDS** allows partial bids, bids not addressing or providing all of the required items in the Schedule of Requirements including, where applicable, bill of quantities, shall be considered non-responsive and, thus, automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a zero (0)

or a dash (-) for the said item would mean that it is being offered for free to the Procuring Entity, except those required by law or regulations to be provided for; and

- (b) Arithmetical corrections. Consider computational errors and omissions to enable proper comparison of all eligible bids. It may also consider bid modifications. Any adjustment shall be calculated in monetary terms to determine the calculated prices.
- 27.4. Based on the detailed evaluation of bids, those that comply with the above-mentioned requirements shall be ranked in the ascending order of their total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, to identify the Lowest Calculated Bid. Total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, which exceed the ABC shall not be considered, unless otherwise indicated in the **BDS**.
- 27.5. The Procuring Entity's evaluation of bids shall be based on the bid price quoted in the Bid Form, which includes the Bill of Quantities.
- 27.6. Bids shall be evaluated on an equal footing to ensure fair competition. For this purpose, all Bidders shall be required to include in their bids the cost of all taxes, such as, but not limited to, value added tax (VAT), income tax, local taxes, and other fiscal levies and duties which shall be itemized in the bid form and reflected in the detailed estimates. Such bids, including said taxes, shall be the basis for bid evaluation and comparison.
- 27.7. If so indicated pursuant to **ITB** Clause 1.2. Bids are being invited for individual lots or for any combination thereof, provided that all Bids and combinations of Bids 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 prices quoted shall correspond to all of the requirements specified for each lot. Bid Security as required by **ITB** Clause 18 shall be submitted for each contract (lot) separately. The basis for evaluation of lots is specified in **BDS** Clause 27.3.

28. Post Qualification

- 28.1. The BAC shall determine to its satisfaction whether the Bidder that is evaluated as having submitted the Lowest Calculated Bid complies with and is responsive to all the requirements and conditions specified in **ITB** Clauses 5, 12, and 13.
- 28.2. 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**.

Failure to submit any of the post-qualification requirements on time, or a finding against the veracity thereof, shall disqualify the Bidder for award.

Provided in the event that a finding against the veracity of any of the documents submitted is made, it shall cause the forfeiture of the bid security in accordance with Section 69 of the IRR of RA 9184.

- 28.3. The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted pursuant to **ITB** Clauses 12 and 13, as well as other information as the Procuring Entity deems necessary and appropriate, using a non-discretionary "pass/fail" criterion, which shall be completed within a period of twelve (12) calendar days.
- 28.4. If the BAC determines that the Bidder with the Lowest Calculated Bid passes all the criteria for post-qualification, it shall declare the said bid as the LCRB, and recommend to the HoPE the award of contract to the said Bidder at its submitted price or its calculated bid price, whichever is lower, subject to **ITB** Clause 30.3.
- 28.5. A negative determination shall result in rejection of the Bidder's bid, in which event the Procuring Entity shall proceed to the next Lowest Calculated Bid, with a fresh period to make a similar determination of that Bidder's capabilities to perform satisfactorily. If the second Bidder, however, fails the post qualification, the procedure for post qualification shall be repeated for the Bidder with the next Lowest Calculated Bid, and so on until the LCRB is determined for recommendation of contract award.
- 28.6. Within a period not exceeding fifteen (15) calendar days from the determination by the BAC of the LCRB and the recommendation to award the contract, the HoPE or his duly authorized representative shall approve or disapprove the said recommendation.
- 28.7. In the event of disapproval, which shall be based on valid, reasonable, and justifiable grounds as provided for under Section 41 of the IRR of RA 9184, the HoPE shall notify the BAC and the Bidder in writing of such decision and the grounds for it. When applicable, the BAC shall conduct a post-qualification of the Bidder with the next Lowest Calculated Bid. A request for reconsideration may be filed by the Bidder with the HoPE in accordance with Section 37.1.3 of the IRR of RA 9184.

29. Reservation Clause

- 29.1. Notwithstanding the eligibility or post-qualification of a Bidder, the Procuring Entity concerned reserves the right to review its qualifications at any stage of the procurement process if it has reasonable grounds to believe that a misrepresentation has been made by the said Bidder, or that there has been a change in the Bidder's capability to undertake the project from the time it submitted its eligibility requirements. Should such review uncover any misrepresentation made in the eligibility and bidding requirements, statements or documents, or any changes in the situation of the Bidder which will affect its capability to undertake the project so that it fails the preset eligibility or bid evaluation criteria, the Procuring Entity shall consider the said Bidder as ineligible and shall disqualify it from submitting a bid or from obtaining an award or contract.

- 29.2. Based on the following grounds, the Procuring Entity reserves the right to reject any and all Bids, declare a Failure of Bidding at any time prior to the contract award, or not to award the contract, without thereby incurring any liability, and make no assurance that a contract shall be entered into as a result of the bidding:
- (a) If there is *prima facie* evidence of collusion between appropriate public officers or employees of the Procuring Entity, or between the BAC and any of the Bidders, or if the collusion is between or among the Bidders themselves, or between a Bidder and a third party, including any act which restricts, suppresses or nullifies or tends to restrict, suppress or nullify competition;
 - (b) If the Procuring Entity's BAC is found to have failed in following the prescribed bidding procedures; or
 - (c) For any justifiable and reasonable ground where the award of the contract will not redound to the benefit of the GOP as follows:
 - (i) If the physical and economic conditions have significantly changed so as to render the project no longer economically, financially or technically feasible as determined by the HoPE;
 - (ii) If the project is no longer necessary as determined by the HoPE; and
 - (iii) If the source of funds for the project has been withheld or reduced through no fault of the Procuring Entity.

29.3. In addition, the Procuring Entity may likewise declare a failure of bidding when:

- (a) No bids are received;
- (b) All prospective Bidders are declared ineligible;
- (c) All bids fail to comply with all the bid requirements, fail post-qualification; or
- (d) The Bidder with the LCRB refuses, without justifiable cause, to accept the award of contract, and no award is made in accordance with Section 40 of the IRR of RA 9184.

F. Award of Contract

30. Contract Award

30.1. Subject to **ITB** Clause 28, the HoPE or its duly authorized representative shall award the contract to the Bidder whose bid has been determined to be the LCRB.

- 30.2. Prior to the expiration of the period of bid validity, the Procuring Entity shall notify the successful Bidder in writing that its bid has been accepted, through a Notice of Award duly received by the Bidder or its representative personally or by registered mail or electronically, receipt of which must be confirmed in writing within two (2) days by the Bidder with the LCRB and submitted personally or sent by registered mail or electronically to the Procuring Entity.
- 30.3. Notwithstanding the issuance of the Notice of Award, award of contract shall be subject to the following conditions:
- (a) Submission of the following documents within ten (10) calendar days from receipt of the Notice of Award:
 - (i) In the case of procurement by a Philippine Foreign Service Office or Post, the PhilGEPS Registration Number of the winning foreign Bidder; or
 - (ii) Valid PCAB license and registration for the type and cost of the contract to be bid for foreign bidders when the Treaty or International or Executive Agreement expressly allows submission of the PCAB license and registration for the type and cost of the contract to be bid as a pre-condition to the Award;
 - (b) Posting of the performance security in accordance with **ITB** Clause 32;
 - (c) Signing of the contract as provided in **ITB** Clause 31; and
 - (d) Approval by higher authority, if required, as provided in Section 37.3 of the IRR of RA 9184.

31. Signing of the Contract

- 31.1. At the same time as the Procuring Entity notifies the successful Bidder that its bid has been accepted, the Procuring Entity shall send the Contract Form to the Bidder, which Contract has been provided in the Bidding Documents, incorporating therein all agreements between the parties.
- 31.2. Within ten (10) calendar days from receipt of the Notice of Award, the successful Bidder shall post the required performance security, sign and date the contract and return it to the Procuring Entity.
- 31.3. The Procuring Entity shall enter into contract with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.
- 31.4. The following documents shall form part of the contract:
- (a) Contract Agreement;
 - (b) Bidding Documents;

- (c) Winning Bidder's bid, including the Technical and Financial Proposals, and all other documents/statements submitted (e.g., Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;
- (d) Performance Security;
- (e) Notice of Award of Contract; and
- (f) Other contract documents that may be required by existing laws and/or specified in the **BDS**.

32. Performance Security

- 32.1. To guarantee the faithful performance by the winning Bidder of its obligations under the contract, it shall post a performance security within a maximum period of ten (10) calendar days from the receipt of the Notice of Award from the Procuring Entity and in no case later than the signing of the contract.
- 32.2. The Performance Security shall be denominated in Philippine Pesos and posted in favor of the Procuring Entity in an amount not less than the percentage of the total contract price in accordance with the following schedule:

Form of Performance Security	Amount of Performance Security (Not less than the Percentage of the Total Contract Price)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank. <i>For biddings conducted by the LGUs, the Cashier's/Manager's Check may be issued by other banks certified by the BSP as authorized to issue such financial instrument.</i>	Ten percent (10%)
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank. <i>For biddings conducted by the LGUs, Bank Draft/Guarantee, or Irrevocable Letter of Credit</i>	

<p><i>may be issued by other banks certified by the BSP as authorized to issue such financial instrument.</i></p>	
<p>(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.</p>	<p>Thirty percent (30%)</p>

32.3. Failure of the successful Bidder to comply with the above-mentioned requirement shall constitute sufficient ground for the annulment of the award and forfeiture of the bid security, in which event the Procuring Entity shall have a fresh period to initiate and complete the post qualification of the second Lowest Calculated Bid. The procedure shall be repeated until LCRB is identified and selected for recommendation of contract award. However if no Bidder passed post-qualification, the BAC shall declare the bidding a failure and conduct a re-bidding with re-advertisement, if necessary.

33. Notice to Proceed

Within seven (7) calendar days from the date of approval of the Contract by the appropriate government approving authority, the Procuring Entity shall issue the Notice to Proceed (NTP) together with a copy or copies of the approved contract to the successful Bidder. All notices called for by the terms of the contract shall be effective only at the time of receipt thereof by the successful Bidder.

34. Protest Mechanism

Decision of the procuring entity at any stage of the procurement process may be questioned in accordance with Sections 55 of the IRR of RA 9184.

Section III. Bid Data Sheet

ITB Clause	
1.1	<p>The Procuring Entity is General Mariano Alvarez (GMA) Water District.</p> <p>The name of the Contract is <i>Construction, Supply, Installation, Commissioning and Process Proving of 15 CMD Septage Treatment Plant and Supply and Delivery of Two (2) units 3.5 cu.m. Capacity Septage Vacuum Trucks.</i></p> <p>The identification number of the Contract is No. 01 - 2019</p>
2	<p>The Funding Source is:</p> <p>The GMAWD General Fund in the amount of <i>Fifty Million Pesos and 00/100 (Php 50,000,000.00).</i></p> <p><i>NOTE: In the case of National Government Agencies, the General Appropriations Act and/or continuing appropriations; in the case of Government-Owned and/or – Controlled Corporations, Government Financial Institutions, and State Universities and Colleges, the Corporate Budget for the contract approved by the governing Boards; in the case of Local Government Units, the Budget for the contract approved by the respective Sanggunian.</i></p>
3.1	No further instructions.
5.1	No further instructions.
5.2	Bidding is restricted to eligible bidders as defined in ITB Clause 5.1.
5.4(a)	<p>For this purpose, similar contracts shall refer to contracts which have the same major categories of work.</p> <p>Construction of a Compact Stand-Alone Septage Treatment Facility with “equal to or less than” fifteen (15) cubic meters per day capacity.</p>
5.4(b)	No further instructions.
8.1	<p>Subcontracting is allowed but subject to the approval of General Mariano Alvarez (GMA) Water District</p> <p><i>NOTE: The contractor shall undertake not less than 50% of the contracted works with its own resources.</i></p>
8.2	Subcontracting is allowed but subject to the approval of General Mariano Alvarez (GMA) Water District

9.1	The Procuring Entity will hold a pre-bid conference for this Project on February 8, 2019, 2:00 pm at <i>GMAWD office Annex Building 3rd Floor, Block 4 Lot 1, Congressional Road, Brgy. Poblacion 2, GMA, Cavite.</i>
10.1	The Procuring Entity's address is: <i>Block 4 Lot 1, Congressional Road, Brgy. Poblacion 2, GMA, Cavite.</i> <i>BAC Chairman: Joevic A. Calvadores</i> <i>(046) 460 - 4645</i> <i>gmawaterdistrict@yahoo.co.in</i>
10.4	No further instructions.
12.1	Other Relevant Documents needed: <ul style="list-style-type: none"> • Authority of the Signing Official • Construction Schedule/Timetable for the proposed work in the form of a Bar/Gantt Chart or PERT-CPM • Organizational Chart for the proposed contract • Duly signed list of contractor's key personnel to be assigned to the contract • Conformity with the Materials Specifications as specified in Section VI. Specifications Item II. – Material Specifications • Certificate of Site Inspection from GMAWD • Tax Identification Number (TIN); • Current income tax returns matching with the Audited Financial Statement and Tax Clearance; • Philgeps Registration certificate; • Bidders should have already completed at least 80% of one (1) cycle of Septage collection and treatment as certified by the LGU/Water Districts that has a Septage Treatment Facility. • Bidder shall have at least five (5) years of experience operating and maintaining a Stand-alone Septage Treatment Facility for a Philippine water district or local government unit running at full plant capacity with no unplanned downtimes, excluding preventive maintenance, as certified by the LGU/Water District.

	<ul style="list-style-type: none"> • The bidder should have an ISO 9001:2015 and ISO 14001:2015, or at least certifications that these designations are in-process. • The bidder should provide a Spare Parts Availability certification for the major equipment in the facility, including the Septage Acceptance Unit, Dewatering Screw Press and Macerator. • Bidder should be able to present test results from a DENR and/or DOH accredited laboratory that the SPTP wastewater effluent is compliant to DENR standards. 																		
12.1(a)(iii)	<p>“Philippine Contractor’s Accreditation Board (PCAB) license :</p> <ul style="list-style-type: none"> • Principal Classification: Category B • Other Classification: General Building • Kind of Project: Sewerage & Sewage Treatment/Disposal Plant • Size Range: Medium A 																		
12.1(b)(ii.2)	<p>The minimum work experience requirements for key personnel are the following:</p> <table border="1"> <thead> <tr> <th><u>Key Personnel</u></th> <th><u>General Experience</u></th> <th><u>Relevant Experience</u></th> </tr> </thead> <tbody> <tr> <td>Project Manager</td> <td>4yrs-General Construction</td> <td>Septage Plant Construction</td> </tr> <tr> <td>Project Engineer</td> <td>4 yrs-General Construction</td> <td>Septage Plant Construction</td> </tr> <tr> <td>Materials Engineer</td> <td>4 yrs-General Construction</td> <td>Septage Plant Construction</td> </tr> <tr> <td>Foreman</td> <td>4yrs-General Construction</td> <td>Septage Plant Construction</td> </tr> <tr> <td>Sanitary Engineer</td> <td>4yrs-Sewage System</td> <td>Sewage Plant Operation</td> </tr> </tbody> </table>	<u>Key Personnel</u>	<u>General Experience</u>	<u>Relevant Experience</u>	Project Manager	4yrs-General Construction	Septage Plant Construction	Project Engineer	4 yrs-General Construction	Septage Plant Construction	Materials Engineer	4 yrs-General Construction	Septage Plant Construction	Foreman	4yrs-General Construction	Septage Plant Construction	Sanitary Engineer	4yrs-Sewage System	Sewage Plant Operation
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12.1(b)(iii.3)	<p>The minimum major equipment requirements are the following:</p> <table border="1"> <thead> <tr> <th><u>Equipment</u></th> <th><u>Number of Units</u></th> </tr> </thead> <tbody> <tr> <td>Backhoe with breaker</td> <td>1</td> </tr> <tr> <td>Road Grader</td> <td>1</td> </tr> <tr> <td>Road Roller</td> <td>1</td> </tr> <tr> <td>Concrete Vibrator</td> <td>1</td> </tr> <tr> <td>Mini Dump Truck</td> <td>1</td> </tr> <tr> <td>Light Truck (ELF)</td> <td>1</td> </tr> <tr> <td>Welding Machine</td> <td>2</td> </tr> <tr> <td>Generator set 13 KvA</td> <td>1</td> </tr> </tbody> </table>	<u>Equipment</u>	<u>Number of Units</u>	Backhoe with breaker	1	Road Grader	1	Road Roller	1	Concrete Vibrator	1	Mini Dump Truck	1	Light Truck (ELF)	1	Welding Machine	2	Generator set 13 KvA	1
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13.1	No additional Requirements																		

13.1(b)	<p>This shall include all of the following documents:</p> <ol style="list-style-type: none"> 1) Bid prices in the Bill of Quantities; 2) Detailed estimates, including a summary sheet indicating the unit prices of construction materials, labor rates and equipment rentals used in coming up with the bid.
13.2	The ABC is <i>Fifty Million Pesos and 00/100 (Php 50,000,000.00)</i> . Any bid with a financial component exceeding this amount shall not be accepted.
14.2	No further instructions.
15.4	No further instruction.
16.1	The bid prices shall be quoted in Philippine Pesos.
16.3	No further instructions.
17.1	Bids will be valid until <i>One Hundred Twenty (120) days from the Opening of the Bid</i>
18.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <ol style="list-style-type: none"> 1. The amount of not less than Php 1,000,000.00 [2% of ABC], if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; 2. The amount of not less than Php 2,500,000.00 [5% of ABC] if bid security is in Surety Bond.
18.2	The bid security shall be valid for 120 calendar days.
20.3	Each Bidder shall submit One original and One copy/duplicate of the first and second components of its bid.
21	<p>The address for submission of bids is <i>GMAWD Office Annex Building 3rd Floor Block-4 Lot-1 Congressional Road, Brgy. Poblacion 2, GMA, Cavite.</i></p> <p>The deadline for submission of bids is <i>February 22, 2019 at 1:00 pm.</i></p>
24.1	<p>The place of bid opening is <i>GMAWD Office Annex Building 3rd Floor Block-4 Lot-1 Congressional Road, Brgy. Poblacion 2, GMA, Cavite.</i></p> <p>The date and time of bid opening is <i>February 22, 2019 at 2:00 pm.</i></p>
24.2	No further instructions.
24.3	No further instructions.

27.3	Partial bid is not allowed. The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
27.4	No further instructions.
28.2	<i>None.</i>
31.4(f)	<p>Additional contract documents relevant to the Project:</p> <ul style="list-style-type: none"> • Any addenda or bid bulletin issued • Other GMA Water District Contract Document Relevant to the Project
31.4(f)	<i>Bidders must provide 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 Department of Labor and Employment, and PERT/CPM.</i>
32.2	<p>The performance security shall be in the following amount:</p> <ol style="list-style-type: none"> 1. The amount of <i>5% of ABC</i>, if performance security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; 2. The amount of <i>30% of ABC</i>, if performance security is in Surety Bond; or 3. Any combination of the foregoing proportionate to the share of form with respect to total amount of security.

Section IV. General Conditions of Contract

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1. Definitions

For purposes of this Clause, boldface type is used to identify defined terms.

- 1.1. The **Arbiter** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC Clause 21.
- 1.2. **Bill of Quantities** refers to a list of the specific items of the Work and their corresponding unit prices, lump sums, and/or provisional sums.
- 1.3. The **Completion Date** is the date of completion of the Works as certified by the Procuring Entity's Representative, in accordance with GCC Clause 49.
- 1.4. The **Contract** is the contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works.
- 1.5. The **Contract Effectivity Date** is the date of signing of the Contract. However, the contractor shall commence execution of the Works on the Start Date as defined in GCC Clause 1.28.
- 1.6. The **Contract Price** is the price stated in the Notice of Award and thereafter to be paid by the Procuring Entity to the Contractor for the execution of the Works in accordance with this Contract
- 1.7. **Contract Time Extension** is the allowable period for the Contractor to complete the Works in addition to the original Completion Date stated in this Contract.
- 1.8. The **Contractor** is the juridical entity whose proposal has been accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded.
- 1.9. The **Contractor's Bid** is the signed offer or proposal submitted by the Contractor to the Procuring Entity in response to the Bidding Documents.
- 1.10. **Days** are calendar days; months are calendar months.
- 1.11. **Dayworks** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
- 1.12. A **Defect** is any part of the Works not completed in accordance with the Contract.
- 1.13. The **Defects Liability Certificate** is the certificate issued by Procuring Entity's Representative upon correction of defects by the Contractor.
- 1.14. The **Defects Liability Period** is the one year period between contract completion and final acceptance within which the Contractor assumes the responsibility to undertake the repair of any damage to the Works at his own expense.

- 1.15 **Drawings** are graphical presentations of the Works. They include all supplementary details, shop drawings, calculations, and other information provided or approved for the execution of this Contract.
- 1.16 **Equipment** refers to all facilities, supplies, appliances, materials or things required for the execution and completion of the Work provided by the Contractor and which shall not form or are not intended to form part of the Permanent Works.
- 1.17 The **Intended Completion Date** refers to the date specified in the **SCC** when the Contractor is expected to have completed the Works. The Intended Completion Date may be revised only by the Procuring Entity's Representative by issuing an extension of time or an acceleration order.
- 1.18 **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- 1.19 The **Notice to Proceed** is a written notice issued by the Procuring Entity or the Procuring Entity's Representative to the Contractor requiring the latter to begin the commencement of the work not later than a specified or determinable date.
- 1.20 **Permanent Works** are all permanent structures and all other project features and facilities required to be constructed and completed in accordance with this Contract which shall be delivered to the Procuring Entity and which shall remain at the Site after the removal of all Temporary Works.
- 1.21 **Plant** refers to the machinery, apparatus, and the like intended to form an integral part of the Permanent Works.
- 1.22 The **Procuring Entity** is the party who employs the Contractor to carry out the Works stated in the **SCC**.
- 1.23 The **Procuring Entity's Representative** refers to the Head of the Procuring Entity or his duly authorized representative, identified in the **SCC**, who shall be responsible for supervising the execution of the Works and administering this Contract.
- 1.24 The **Site** is the place provided by the Procuring Entity where the Works shall be executed and any other place or places which may be designated in the **SCC**, or notified to the Contractor by the Procuring Entity's Representative as forming part of the Site.
- 1.25 **Site Investigation Reports** are those that were included in the Bidding Documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- 1.26 **Slippage** is a delay in work execution occurring when actual accomplishment falls below the target as measured by the difference between the scheduled and actual accomplishment of the Work by the Contractor as established from the work schedule. This is actually described as a percentage of the whole Works.

- 1.27 **Specifications** means the description of Works to be done and the qualities of materials to be used, the equipment to be installed and the mode of construction.
- 1.28 The **Start Date**, as specified in the **SCC**, is the date when the Contractor is obliged to commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- 1.29 A **Subcontractor** is any person or organization to whom a part of the Works has been subcontracted by the Contractor, as allowed by the Procuring Entity, but not any assignee of such person.
- 1.30 **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Permanent Works.
- 1.31 **Work(s)** refer to the Permanent Works and Temporary Works to be executed by the Contractor in accordance with this Contract, including (i) the furnishing of all labor, materials, equipment and others incidental, necessary or convenient to the complete execution of the Works; (ii) the passing of any tests before acceptance by the Procuring Entity's Representative; (iii) and the carrying out of all duties and obligations of the Contractor imposed by this Contract as described in the **SCC**.

2. Interpretation

- 2.1. In interpreting the Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of this Contract unless specifically defined. The Procuring Entity's Representative will provide instructions clarifying queries about the Conditions of Contract.
- 2.2. If sectional completion is specified in the **SCC**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3. The documents forming this Contract shall be interpreted in the following order of priority:
- a) Contract Agreement;
 - b) Bid Data Sheet;
 - c) Instructions to Bidders;
 - d) Addenda to the Bidding Documents;
 - e) Special Conditions of Contract;
 - f) General Conditions of Contract;

- g) Specifications;
- h) Bill of Quantities; and
- i) Drawings.

3. Governing Language and Law

- 3.1. This Contract has been executed in the English language, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract. All correspondence and other documents pertaining to this Contract which are exchanged by the parties shall be written in English.
- 3.2. This Contract shall be interpreted in accordance with the laws of the Republic of the Philippines.

4. Communications

Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is received by the concerned party.

5. Possession of Site

- 5.1. On the date specified in the **SCC**, the Procuring Entity shall grant the Contractor possession of so much of the Site as may be required to enable it to proceed with 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.
- 5.2. If possession of a portion is not given by the date stated in the SCC Clause 5.1, 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 shall be in accordance with **GCC** Clause 47.
- 5.3. The Contractor shall bear all costs and charges for special or temporary right-of-way required by it in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by it for purposes of the Works.
- 5.4. The Contractor shall allow the Procuring Entity's Representative and any person authorized by the Procuring Entity's Representative access to the Site and to any place where work in connection with this Contract is being carried out or is intended to be carried out.

6. The Contractor's Obligations

- 6.1. The Contractor shall carry out the Works properly and in accordance with this Contract. The Contractor shall provide all supervision, labor, Materials, Plant and Contractor's Equipment, which may be required. All Materials and Plant on Site shall be deemed to be the property of the Procuring Entity.
- 6.2. The Contractor shall commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program of Work submitted by the Contractor, as updated with the approval of the Procuring Entity's Representative, and complete them by the Intended Completion Date.
- 6.3. The Contractor shall be responsible for the safety of all activities on the Site.
- 6.4. The Contractor shall carry out all instructions of the Procuring Entity's Representative that comply with the applicable laws where the Site is located.
- 6.5. The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the SCC, 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.
- 6.6. If the Procuring Entity's Representative asks the Contractor to remove a member of the Contractor's staff or work force, for justifiable cause, the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the Work in this Contract.
- 6.7. During Contract implementation, the Contractor and his subcontractors shall abide at all times by all labor laws, including child labor related enactments, and other relevant rules.
- 6.8. The Contractor shall submit to the Procuring Entity for consent the name and particulars of the person authorized to receive instructions on behalf of the Contractor.
- 6.9. The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the schedule of other contractors particularly when they shall require access to the Site. The Contractor shall also provide facilities and services for them during this period. The Procuring Entity may modify the schedule of other contractors, and shall notify the Contractor of any such modification thereto.
- 6.10. Should anything of historical or other interest or of significant value be unexpectedly discovered on the Site, it shall be the property of the Procuring Entity. The Contractor shall notify the Procuring Entity's Representative of such discoveries and carry out the Procuring Entity's Representative's instructions in dealing with them.

7. Performance Security

- 7.1. 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 Contractor shall furnish the performance security in any of the forms prescribed in **ITB** Clause 32.2.
- 7.2. The performance security posted in favor of the Procuring Entity shall be forfeited in the event it is established that the Contractor is in default in any of its obligations under the Contract.
- 7.3. The performance security shall remain valid until issuance by the Procuring Entity of the Certificate of Final Acceptance.
- 7.4. The performance security may be released by the Procuring Entity and returned to the Contractor after the issuance of the Certificate of Final Acceptance subject to the following conditions:
 - (a) There are no pending claims against the Contractor or the surety company filed by the Procuring Entity;
 - (b) The Contractor has no pending claims for labor and materials filed against it; and
 - (c) Other terms specified in the **SCC**.
- 7.5. The Contractor shall post an additional performance security following the amount and form specified in **ITB** Clause 32.2 to cover any cumulative increase of more than ten percent (10%) over the original value of the contract as a result of amendments to order or change orders, extra work orders and supplemental agreements, as the case may be. The Contractor shall cause the extension of the validity of the performance security to cover approved contract time extensions.
- 7.6. In case of a reduction in the contract value or for partially completed Works under the contract which are usable and accepted by the Procuring Entity the use of which, in the judgment of the implementing agency or the Procuring Entity, will not affect the structural integrity of the entire project, the Procuring Entity shall allow a proportional reduction in the original performance security, provided that any such reduction is more than ten percent (10%) and that the aggregate of such reductions is not more than fifty percent (50%) of the original performance security.
- 7.7. Unless otherwise indicated in the **SCC**, the Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to Act 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.

8. Subcontracting

- 8.1. Unless otherwise indicated in the **SCC**, the Contractor cannot subcontract Works more than the percentage specified in **BDS** Clause 8.1.
- 8.2. Subcontracting of any portion of the Works does not relieve the Contractor of any liability or obligation under this Contract. The Contractor will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants or workmen.
- 8.3. If subcontracting is allowed. The contractor may identify its subcontractor during contract implementation stage. Subcontractors disclosed and identified during the bidding may be changed during the implementation of this Contract. In either case, subcontractors must submit the documentary requirements under ITB Clause 12 and comply with the eligibility criteria specified in the **BDS**. In the event that any subcontractor is found by any Procuring Entity to be eligible, the subcontracting of such portion of the Works shall be disallowed.

9. Liquidated Damages

- 9.1. The Contractor shall pay liquidated damages to the Procuring Entity for each day that the Completion Date is later than the Intended Completion Date. The applicable liquidated damages is at least one-tenth (1/10) of a percent of the cost of the unperformed portion for every day of delay. The total amount of liquidated damages shall not exceed ten percent (10%) of the amount of the contract. The Procuring Entity may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of this Contract, the Procuring Entity may rescind or terminate this Contract, without prejudice to other courses of action and remedies available under the circumstances.
- 9.2. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer of the Procuring Entity shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate.

10. 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.

11. The Procuring Entity, Licenses and Permits

The Procuring Entity shall, if requested by the Contractor, assist him in applying for permits, licenses or approvals, which are required for the Works.

12. Contractor's Risk and Warranty Security

- 12.1. The Contractor shall assume full responsibility for the Works from the time project construction commenced up to final acceptance by the Procuring Entity and shall be held responsible for any damage or destruction of the Works except those occasioned by *force majeure*. The Contractor shall be fully responsible for the safety, protection, security, and convenience of his personnel, third parties, and the public at large, as well as the Works, Equipment, installation, and the like to be affected by his construction work.
- 12.2. The defects liability period for infrastructure projects shall be one year from contract completion up to final acceptance by the Procuring Entity. During this period, the Contractor shall undertake the repair works, at his own expense, of any damage to the Works on account of the use of materials of inferior quality within ninety (90) days from the time the HoPE has issued an order to undertake repair. In case of failure or refusal to comply with this mandate, the Procuring Entity shall undertake such repair works and shall be entitled to full reimbursement of expenses incurred therein upon demand.
- 12.3. Unless otherwise indicated in the **SCC**, in case the Contractor fails to comply with the preceding paragraph, 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.
- 12.4. After final acceptance of the Works by the Procuring Entity, the Contractor shall be held responsible for "Structural Defects," *i.e.*, major faults/flaws/deficiencies in one or more key structural elements of the project which may lead to structural failure of the completed elements or structure, or "Structural Failures," *i.e.*, where one or more key structural elements in an infrastructure facility fails or collapses, thereby rendering the facility or part thereof incapable of withstanding the design loads, and/or endangering the safety of the users or the general public:
 - (a) Contractor – Where Structural Defects/Failures arise due to faults attributable to improper construction, use of inferior quality/substandard materials, and any violation of the contract plans and specifications, the contractor shall be held liable;
 - (b) Consultants – Where Structural Defects/Failures arise due to faulty and/or inadequate design and specifications as well as construction supervision, then the consultant who prepared the design or undertook construction supervision for the project shall be held liable;
 - (c) Procuring Entity's Representatives/Project Manager/Construction Managers and Supervisors – The project owner's representative(s), project manager, construction manager, and supervisor(s) shall be held liable in cases where the Structural Defects/Failures are due to his/their willful intervention in altering the designs and other specifications; negligence or omission in not approving or acting on proposed changes

to noted defects or deficiencies in the design and/or specifications; and the use of substandard construction materials in the project;

- (d) Third Parties - Third Parties shall be held liable in cases where Structural Defects/Failures are caused by work undertaken by them such as leaking pipes, diggings or excavations, underground cables and electrical wires, underground tunnel, mining shaft and the like, in which case the applicable warranty to such structure should be levied to third parties for their construction or restoration works.
- (e) Users - In cases where Structural Defects/Failures are due to abuse/misuse by the end user of the constructed facility and/or non-compliance by a user with the technical design limits and/or intended purpose of the same, then the user concerned shall be held liable.

12.5. The warranty against Structural Defects/Failures, except those occasioned on force majeure, shall cover the period specified in the **SCC** reckoned from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity.

12.6. The Contractor shall be required to put up a warranty security in the form of cash, bank guarantee, letter of credit, GSIS or surety bond callable on demand, in accordance with the following schedule:

Form of Warranty	Amount of Warranty Security Not less than the Percentage (%) of Total Contract Price
(a) Cash or letter of credit issued by Universal or Commercial bank: provided, however, that the letter of credit shall be confirmed or authenticated by a Universal or Commercial bank, if issued by a foreign bank	Five Percent (5%)
(b) Bank guarantee confirmed by Universal or Commercial bank: provided, however, that the letter of credit shall be confirmed or authenticated by a Universal or Commercial bank, if issued by a foreign bank	Ten Percent (10%)
(c) Surety bond callable upon demand issued by GSIS or any surety or insurance company duly certified by the Insurance Commission	Thirty Percent (30%)

12.7. The warranty security shall be stated in Philippine Pesos and shall remain effective for one year from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity, and returned only after the lapse of said one year period.

12.8. In case of structural defects/failure occurring during the applicable warranty period provided in **GCC** Clause 12.5, the Procuring Entity shall undertake the necessary restoration or reconstruction works and shall be entitled to full reimbursement by the parties found to be liable for expenses incurred therein upon demand, without prejudice to the filing of appropriate administrative, civil, and/or criminal charges against the responsible persons as well as the forfeiture of the warranty security posted in favor of the Procuring Entity.

13. 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.

14. Procuring Entity's Risk

14.1. From the Start Date until the Certificate of Final Acceptance has been issued, the following are risks of the Procuring Entity:

- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to:
 - (i) any type of use or occupation of the Site authorized by the Procuring Entity after the official acceptance of the works; or
 - (ii) negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or contracted to him except the Contractor.
- (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

15. Insurance

15.1. The Contractor shall, under his name and at his own expense, obtain and maintain, for the duration of this Contract, the following insurance coverage:

- (a) Contractor's All Risk Insurance;
- (b) Transportation to the project Site of Equipment, Machinery, and Supplies owned by the Contractor;
- (c) Personal injury or death of Contractor's employees; and
- (d) Comprehensive insurance for third party liability to Contractor's direct or indirect act or omission causing damage to third persons.

15.2. The Contractor shall provide evidence to the Procuring Entity's Representative that the insurances required under this Contract have been

effected and shall, within a reasonable time, provide copies of the insurance policies to the Procuring Entity's Representative. Such evidence and such policies shall be provided to the Procuring Entity's through the Procuring Entity's Representative.

- 15.3. The Contractor shall notify the insurers of changes in the nature, extent, or program for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of this Contract and shall produce to the Procuring Entity's Representative the insurance policies in force including the receipts for payment of the current premiums.

The above insurance policies shall be obtained from any reputable insurance company approved by the Procuring Entity's Representative.

- 15.4. If the Contractor fails to obtain and keep in force the insurances referred to herein or any other insurance which he may be required to obtain under the terms of this Contract, the Procuring Entity may obtain and keep in force any such insurances and pay such premiums as may be necessary for the purpose. From time to time, the Procuring Entity may deduct the amount it shall pay for said premiums including twenty five percent (25%) therein from any monies due, or which may become due, to the Contractor, without prejudice to the Procuring Entity exercising its right to impose other sanctions against the Contractor pursuant to the provisions of this Contract.

- 15.5. In the event the Contractor fails to observe the above safeguards, the Procuring Entity may, at the Contractor's expense, take whatever measure is deemed necessary for its protection and that of the Contractor's personnel and third parties, and/or order the interruption of dangerous Works. In addition, the Procuring Entity may refuse to make the payments under GCC Clause 40 until the Contractor complies with this Clause.

- 15.6. The Contractor shall immediately replace the insurance policy obtained as required in this Contract, without need of the Procuring Entity's demand, with a new policy issued by a new insurance company acceptable to the Procuring Entity for any of the following grounds:

- (a) The issuer of the insurance policy to be replaced has:
 - (i) become bankrupt;
 - (ii) been placed under receivership or under a management committee;
 - (iii) been sued for suspension of payment; or
 - (iv) been suspended by the Insurance Commission and its license to engage in business or its authority to issue insurance policies cancelled; or

- (v) Where reasonable grounds exist that the insurer may not be able, fully and promptly, to fulfill its obligation under the insurance policy.

16. Termination for Default of Contractor

16.1. The Procuring Entity shall terminate this Contract for default when any of the following conditions attend its implementation:

- (i) Due to the Contractor's fault and while the project is on-going, it has incurred negative slippage of fifteen percent (15%) or more in accordance with Presidential Decree 1870, regardless of whether or not previous warnings and notices have been issued for the Contractor to improve his performance;
- (ii) Due to its own fault and after this Contract time has expired, the Contractor incurs delay in the completion of the Work after this Contract has expired; or
- (iii) The Contractor:
 - (i) abandons the contract Works, refuses or fails to comply with a valid instruction of the Procuring Entity or fails to proceed expeditiously and without delay despite a written notice by the Procuring Entity;
 - (ii) does not actually have on the project Site the minimum essential equipment listed on the bid necessary to prosecute the Works in accordance with the approved Program of Work and equipment deployment schedule as required for the project;
 - (iii) does not execute the Works in accordance with this Contract or persistently or flagrantly neglects to carry out its obligations under this Contract;
 - (iv) neglects or refuses to remove materials or to perform a new Work that has been rejected as defective or unsuitable; or
 - (v) sub-lets any part of this Contract without approval by the Procuring Entity.

16.2. All materials on the Site, Plant, Works, including Equipment purchased and funded under the Contract shall be deemed to be the property of the Procuring Entity if this Contract is rescinded because of the Contractor's default.

17. Termination for Default of Procuring Entity

The Contractor may terminate this Contract with the Procuring Entity if the works are completely stopped for a continuous period of at least sixty (60) calendar days through no fault of its own, due to any of the following reasons:

- (a) Failure of the Procuring Entity to deliver, within a reasonable time, supplies, materials, right-of-way, or other items it is obligated to furnish under the terms of this Contract; or
- (b) The prosecution of the Work is disrupted by the adverse peace and order situation, as certified by the Armed Forces of the Philippines Provincial Commander and approved by the Secretary of National Defense.

18. Termination for Other Causes

- 18.1. The Procuring Entity may terminate this Contract, in whole or in part, at any time for its convenience. The HoPE may terminate this Contract for the convenience of the Procuring Entity if he has determined the existence of conditions that make Project Implementation economically, financially or technically impractical and/or unnecessary, such as, but not limited to, fortuitous event(s) or changes in law and National Government policies.
- 18.2. The Procuring Entity or the Contractor may terminate this Contract if the other party causes a fundamental breach of this Contract.
- 18.3. Fundamental breaches of Contract shall include, but shall not be limited to, the following:
 - (a) The Contractor stops work for twenty eight (28) days when no stoppage of work is shown on the current Program of Work and the stoppage has not been authorized by the Procuring Entity's Representative;
 - (b) The Procuring Entity's Representative instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within twenty eight (28) days;
 - (c) The Procuring Entity shall terminate this Contract if the Contractor is declared bankrupt or insolvent as determined with finality by a court of competent jurisdiction. In this event, termination will be without compensation to the Contractor, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Procuring Entity and/or the Contractor. In the case of the Contractor's insolvency, any Contractor's Equipment which the Procuring Entity instructs in the notice is to be used until the completion of the Works;
 - (d) A payment certified by the Procuring Entity's Representative is not paid by the Procuring Entity to the Contractor within eighty four (84) days from the date of the Procuring Entity's Representative's certificate;
 - (e) The Procuring Entity's Representative gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Procuring Entity's Representative;

- (f) The Contractor does not maintain a Security, which is required;
 - (g) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the **GCC** Clause 9; and
 - (h) 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, the following:
 - (i) corrupt, fraudulent, collusive, coercive, and obstructive practices as defined in **ITB** Clause 3.1(a), unless otherwise specified in the SCC;
 - (ii) drawing up or using forged documents;
 - (iii) using adulterated materials, means or methods, or engaging in production contrary to rules of science or the trade; and
 - (iv) any other act analogous to the foregoing.
- 18.4. The Funding Source or the Procuring Entity, as appropriate, will seek to impose the maximum civil, administrative and/or criminal penalties available under the applicable law on individuals and organizations deemed to be involved with corrupt, fraudulent, or coercive practices.
- 18.5. When persons from either party to this Contract gives notice of a fundamental breach to the Procuring Entity's Representative in order to terminate the existing contract for a cause other than those listed under **GCC** Clause 18.3, the Procuring Entity's Representative shall decide whether the breach is fundamental or not.
- 18.6. If this Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

19. Procedures for Termination of Contracts

- 19.1. The following provisions shall govern the procedures for the termination of this Contract:
- (a) Upon receipt of a written report of acts or causes which may constitute ground(s) for termination as aforementioned, or upon its own initiative, the Procuring Entity shall, within a period of seven (7) calendar days, verify the existence of such ground(s) and cause the execution of a Verified Report, with all relevant evidence attached;
 - (b) Upon recommendation by the Procuring Entity, the HoPE shall terminate this Contract only by a written notice to the Contractor conveying the termination of this Contract. The notice shall state:

- (i) that this Contract is being terminated for any of the ground(s) afore-mentioned, and a statement of the acts that constitute the ground(s) constituting the same;
- (ii) the extent of termination, whether in whole or in part;
- (iii) an instruction to the Contractor to show cause as to why this Contract should not be terminated; and
- (iv) special instructions of the Procuring Entity, if any.

The Notice to Terminate shall be accompanied by a copy of the Verified Report;

- (c) Within a period of seven (7) calendar days from receipt of the Notice of Termination, the Contractor shall submit to the HoPE a verified position paper stating why the contract should not be terminated. If the Contractor fails to show cause after the lapse of the seven (7) day period, either by inaction or by default, the HoPE shall issue an order terminating the contract;
- (d) The Procuring Entity may, at anytime before receipt of the Contractor's verified position paper described in item (c) above withdraw the Notice to Terminate if it is determined that certain items or works subject of the notice had been completed, delivered, or performed before the Contractor's receipt of the notice;
- (e) Within a non-extendible period of ten (10) calendar days from receipt of the verified position paper, the HoPE shall decide whether or not to terminate this Contract. It shall serve a written notice to the Contractor of its decision and, unless otherwise provided in the said notice, this Contract is deemed terminated from receipt of the Contractor of the notice of decision. The termination shall only be based on the ground(s) stated in the Notice to Terminate; and
- (f) The HoPE may create a Contract Termination Review Committee (CTRC) to assist him in the discharge of this function. All decisions recommended by the CTRC shall be subject to the approval of the HoPE.

19.2. Pursuant to Section 69(f) of RA 9184 and without prejudice to the imposition of additional administrative sanctions as the internal rules of the agency may provide and/or further criminal prosecution as provided by applicable laws, the procuring entity shall impose on contractors after the termination of the contract the penalty of suspension for one (1) year for the first offense, suspension for two (2) years for the second offense from participating in the public bidding process, for violations committed during the contract implementation stage, which include but not limited to the following:

- (a) Failure of the contractor, due solely to his fault or negligence, to mobilize and start work or performance within the specified period in the Notice to Proceed (“NTP”);
- (b) Failure by the contractor to fully and faithfully comply with its contractual obligations without valid cause, or failure by the contractor to comply with any written lawful instruction of the procuring entity or its representative(s) pursuant to the implementation of the contract. For the procurement of infrastructure projects or consultancy contracts, lawful instructions include but are not limited *to* the following:
 - (i) Employment of competent technical personnel, competent engineers and/or work supervisors;
 - (ii) Provision of warning signs and barricades in accordance with approved plans and specifications and contract provisions;
 - (iii) Stockpiling in proper places of all materials and removal from the project site of waste and excess materials, including broken pavement and excavated debris in accordance with approved plans and specifications and contract provisions;
 - (iv) Deployment of committed equipment, facilities, support staff and manpower; and
 - (v) Renewal of the effectivity dates of the performance security after its expiration during the course of contract implementation.
- (c) Assignment and subcontracting of the contract or any part thereof or substitution of key personnel named in the proposal without prior written approval by the procuring entity.
- (d) Poor performance by the contractor or unsatisfactory quality and/or progress of work arising from his fault or negligence as reflected in the Constructor's Performance Evaluation System (“CPES”) rating sheet. In the absence of the CPES rating sheet, the existing performance monitoring system of the procuring entity shall be applied. Any of the following acts by the Contractor shall be construed as poor performance:
 - (i) Negative slippage of 15% and above within the critical path of the project due entirely to the fault or negligence of the contractor; and
 - (ii) Quality of materials and workmanship not complying with the approved specifications arising from the contractor's fault or negligence.

- (e) Willful or deliberate abandonment or non-performance of the project or contract by the contractor resulting to substantial breach thereof without lawful and/or just cause.

In addition to the penalty of suspension, the performance security posted by the contractor shall also be forfeited.

20. Force Majeure, Release From Performance

- 20.1. For purposes of this Contract the terms “*force majeure*” and “fortuitous event” may be used interchangeably. In this regard, a fortuitous event or *force majeure* shall be interpreted to mean an event which the Contractor could not have foreseen, or which though foreseen, was inevitable. It shall not include ordinary unfavorable weather conditions; and any other cause the effects of which could have been avoided with the exercise of reasonable diligence by the Contractor.
- 20.2. If this Contract is discontinued by an outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Procuring Entity’s Representative shall certify that this Contract has been discontinued. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any Work carried out afterwards to which a commitment was made.
- 20.3. If the event continues for a period of eighty four (84) days, either party may then give notice of termination, which shall take effect twenty eight (28) days after the giving of the notice.
- 20.4. After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the materials and Plant reasonably delivered to the Site, adjusted by the following:
 - (a) any sum to which the Contractor is entitled under GCC Clause 28;
 - (b) the cost of his suspension and demobilization;
 - (c) any sum to which the Procuring Entity is entitled.
- 20.5. The net balance due shall be paid or repaid within a reasonable time period from the time of the notice of termination.

21. Resolution of Disputes

- 21.1. If any dispute or difference of any kind whatsoever shall arise between the parties in connection with the implementation of the contract covered by the Act and this IRR, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.
- 21.2. If the Contractor believes that a decision taken by the Procuring Entity’s Representative was either outside the authority given to the Procuring Entity’s

Representative by this Contract or that the decision was wrongly taken, the decision shall be referred to the Arbiter indicated in the **SCC** within fourteen (14) days of the notification of the Procuring Entity's Representative's decision.

- 21.3. Any and all disputes arising from the implementation of this Contract covered by the R.A. 9184 and its IRR shall be submitted to arbitration in the Philippines according to the provisions of Republic Act No. 876, otherwise known as the "Arbitration Law" and Republic Act 9285, otherwise known as the "Alternative Dispute Resolution Act of 2004": *Provided, however*, That, disputes that are within the competence of the Construction Industry Arbitration Commission to resolve shall be referred thereto. The process of arbitration shall be incorporated as a provision in this Contract that will be executed pursuant to the provisions of the Act and its IRR: *Provided, further*, That, by mutual agreement, the parties may agree in writing to resort to other alternative modes of dispute resolution.

22. Suspension of Loan, Credit, Grant, or Appropriation

In the event that the Funding Source suspends the Loan, Credit, Grant, or Appropriation to the Procuring Entity, from which part of the payments to the Contractor are being made:

- (a) The Procuring Entity is obligated to notify the Contractor of such suspension within seven (7) days of having received the suspension notice.
- (b) If the Contractor has not received sums due it for work already done within forty five (45) days from the time the Contractor's claim for payment has been certified by the Procuring Entity's Representative, the Contractor may immediately issue a suspension of work notice in accordance with **GCC** Clause 45.2.

23. Procuring Entity's Representative's Decisions

- 23.1. Except where otherwise specifically stated, the Procuring Entity's Representative will decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity.
- 23.2. The Procuring Entity's Representative may delegate any of his duties and responsibilities to other people, except to the Arbiter, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

24. Approval of Drawings and Temporary Works by the Procuring Entity's Representative

- 24.1. All Drawings prepared by the Contractor for the execution of the Temporary Works, are subject to prior approval by the Procuring Entity's Representative before its use.
- 24.2. The Contractor shall be responsible for design of Temporary Works.

- 24.3. The Procuring Entity's Representative's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 24.4. The Contractor shall obtain approval of third parties to the design of the Temporary Works, when required by the Procuring Entity.

25. Acceleration and Delays Ordered by the Procuring Entity's Representative

- 25.1. When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Procuring Entity's Representative will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date will be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.
- 25.2. If the Contractor's Financial Proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

26. Extension of the Intended Completion Date

- 26.1. The Procuring Entity's Representative shall extend the Intended Completion Date if a Variation is issued which makes it impossible for the Intended Completion Date to be achieved by the Contractor without taking steps to accelerate the remaining work, which would cause the Contractor to incur additional costs. No payment shall be made for any event which may warrant the extension of the Intended Completion Date.
- 26.2. The Procuring Entity's Representative shall decide whether and by how much to extend the Intended Completion Date within twenty one (21) days of the Contractor asking the Procuring Entity's Representative for a decision thereto after fully submitting all supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

27. Right to Vary

- 27.1. The Procuring Entity's Representative with the prior approval of the Procuring Entity may instruct Variations, up to a maximum cumulative amount of ten percent (10%) of the original contract cost.
- 27.2. Variations shall be valued as follows:
- (a) At a lump sum price agreed between the parties;
 - (b) where appropriate, at rates in this Contract;
 - (c) in the absence of appropriate rates, the rates in this Contract shall be used as the basis for valuation; or failing which

- (d) at appropriate new rates, equal to or lower than current industry rates and to be agreed upon by both parties and approved by the HoPE.

28. Contractor's Right to Claim

If the Contractor incurs cost as a result of any of the events under **GCC** Clause 13, the Contractor shall be entitled to the amount of such cost. If as a result of any of the said events, it is necessary to change the Works, this shall be dealt with as a Variation.

29. Dayworks

- 29.1. Subject to **GCC** Clause 43 on Variation Order, 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.
- 29.2. All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Procuring Entity's Representative. Each completed form shall be verified and signed by the Procuring Entity's Representative within two days of the work being done.
- 29.3. The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

30. Early Warning

- 30.1. The Contractor shall warn the Procuring Entity's Representative at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Procuring Entity's Representative may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 30.2. The Contractor shall cooperate with the Procuring Entity's Representative in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Procuring Entity's Representative.

31. Program of Work

- 31.1. Within the time stated in the **SCC**, the Contractor shall submit to the Procuring Entity's Representative for approval a Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 31.2. An update of the Program of Work shall show the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

- 31.3. 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.
- 31.4. The Procuring Entity's Representative's approval of the Program of Work shall not alter the Contractor's obligations. The Contractor may revise the Program of Work and submit it to the Procuring Entity's Representative again at any time. A revised Program of Work shall show the effect of any approved Variations.
- 31.5. When the Program of Work is updated, the Contractor shall provide the Procuring Entity's Representative with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.
- 31.6. All Variations shall be included in updated Program of Work produced by the Contractor.

32. Management Conferences

- 32.1. Either the Procuring Entity's Representative or the Contractor may require the other to attend a Management Conference. The Management Conference shall review the plans for remaining work and deal with matters raised in accordance with the early warning procedure.
- 32.2. The Procuring Entity's Representative shall record the business of Management Conferences and provide copies of the record to those attending the Conference and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Procuring Entity's Representative either at the Management Conference or after the Management Conference and stated in writing to all who attended the Conference.

33. Bill of Quantities

- 33.1. The Bill of Quantities shall contain items of work for the construction, installation, testing, and commissioning of work to be done by the Contractor.
- 33.2. The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.
- 33.3. If the final quantity of any work done differs from the quantity in the Bill of Quantities for the particular item and is not more than twenty five percent (25%) of the original quantity, provided the aggregate changes for all items do not exceed ten percent (10%) of the Contract price, the Procuring Entity's Representative shall make the necessary adjustments to allow for the changes subject to applicable laws, rules, and regulations.

- 33.4. If requested by the Procuring Entity's Representative, the Contractor shall provide the Procuring Entity's Representative with a detailed cost breakdown of any rate in the Bill of Quantities.

34. Instructions, Inspections and Audits

- 34.1. The Procuring Entity's personnel shall at all reasonable times during construction of the Work be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of the construction.
- 34.2. If the Procuring Entity's Representative instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect, the test shall be a Compensation Event.
- 34.3. The Contractor shall permit the Funding Source named in the SCC to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Funding Source, if so required by the Funding Source.

35. Identifying Defects

The Procuring Entity's Representative shall check the Contractor's work and notify the Contractor of any defects that are found. Such checking shall not affect the Contractor's responsibilities. The Procuring Entity's Representative may instruct the Contractor to search uncover defects and test any work that the Procuring Entity's Representative considers below standards and defective.

36. Cost of Repairs

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

37. Correction of Defects

- 37.1. The Procuring Entity's Representative shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which is One (1) year from project completion up to final acceptance by the Procuring Entity's Representative.
- 37.2. Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified in the Procuring Entity's Representative's notice.
- 37.3. The Contractor shall correct the defects which he notices himself before the end of the Defects Liability Period.
- 37.4. The Procuring Entity shall certify that all defects have been corrected. If the Procuring Entity considers that correction of a defect is not essential, he can

request the Contractor to submit a quotation for the corresponding reduction in the Contract Price. If the Procuring Entity accepts the quotation, the corresponding change in the SCC is a Variation.

38. Uncorrected Defects

- 38.1. The Procuring Entity shall give the Contractor at least fourteen (14) days notice of his intention to use a third party to correct a Defect. If the Contractor does not correct the Defect himself within the period, the Procuring Entity may have the Defect corrected by the third party. The cost of the correction will be deducted from the Contract Price.
- 38.2. The use of a third party to correct defects that are uncorrected by the Contractor will in no way relieve the Contractor of its liabilities and warranties under the Contract.

39. Advance Payment

- 39.1. 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**.
- 39.2. The advance payment shall be made only upon the submission to and acceptance by the Procuring Entity of an irrevocable standby letter of credit of equivalent value from a commercial bank, a bank guarantee or a surety bond callable upon demand, issued by a surety or insurance company duly licensed by the Insurance Commission and confirmed by the Procuring Entity.
- 39.3. The advance payment shall be repaid by the Contractor by an amount equal to the percentage of the total contract price used for the advance payment.
- 39.4. The contractor may reduce his standby letter of credit or guarantee instrument by the amounts refunded by the Monthly Certificates in the advance payment.
- 39.5. The Procuring Entity will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to the maximum amount stated in **SCC** Clause 39.1.

40. Progress Payments

- 40.1. The Contractor may submit a request for payment for Work accomplished. Such request 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.
- 40.2. The Procuring Entity shall deduct the following from the certified gross amounts to be paid to the contractor as progress payment:

- (a) Cumulative value of the work previously certified and paid for.
 - (b) Portion of the advance payment to be recouped for the month.
 - (c) Retention money in accordance with the condition of contract.
 - (d) Amount to cover third party liabilities.
 - (e) Amount to cover uncorrected discovered defects in the works.
- 40.3. Payments shall be adjusted by deducting therefrom the amounts for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Procuring Entity's Representative within twenty eight (28) days from the date each certificate was issued. No payment of interest for delayed payments and adjustments shall be made by the Procuring Entity.
- 40.4. The first progress payment may be paid by the Procuring Entity to the Contractor provided that at least twenty percent (20%) of the work has been accomplished as certified by the Procuring Entity's Representative.
- 40.5. Items of the Works for which a price of "0" (zero) has been entered will not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

41. Payment Certificates

- 41.1. The Contractor shall submit to the Procuring Entity's Representative monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 41.2. The Procuring Entity's Representative shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 41.3. The value of Work executed shall:
- (a) be determined by the Procuring Entity's Representative;
 - (b) comprise the value of the quantities of the items in the Bill of Quantities completed; and
 - (c) include the valuations of approved variations.
- 41.4. The Procuring Entity's Representative may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

42. Retention

- 42.1. The Procuring Entity shall retain from each payment due to the Contractor an amount equal to a percentage thereof using the rate as specified in GCC Sub-Clause 42.2.

- 42.2. Progress payments are subject to retention of ten percent (10%), referred to as the “retention money.” Such retention shall be based on the total amount due to the Contractor prior to any deduction and shall be retained from every progress payment until fifty percent (50%) of the value of Works, as determined by the Procuring Entity, are completed. If, after fifty percent (50%) completion, the Work is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the ten percent (10%) retention shall again be imposed using the rate specified therefor.
- 42.3. The total “retention money” shall be due for release upon final acceptance of the Works. The Contractor may, however, request the substitution of the retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to the Procuring Entity, provided that the project is on schedule and is satisfactorily undertaken. Otherwise, the ten (10%) percent retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of the Government shall be valid for a duration to be determined by the concerned implementing office/agency or Procuring Entity and will answer for the purpose for which the ten (10%) percent retention is intended, *i.e.*, to cover uncorrected discovered defects and third party liabilities.
- 42.4. On completion of the whole Works, the Contractor may substitute retention money with an “on demand” Bank guarantee in a form acceptable to the Procuring Entity.

43. Variation Orders

- 43.1. Variation Orders may be issued by the Procuring Entity to cover any increase/decrease in quantities, including the introduction of new work items that are not included in the original contract or reclassification of work items that are either due to change of plans, design or alignment to suit actual field conditions resulting in disparity between the preconstruction plans used for purposes of bidding and the “as staked plans” or construction drawings prepared after a joint survey by the Contractor and the Procuring Entity after award of the contract, provided that the cumulative amount of the Variation Order does not exceed ten percent (10%) of the original project cost. The addition/deletion of Works should be within the general scope of the project as bid and awarded. The scope of works shall not be reduced so as to accommodate a positive Variation Order. A Variation Order may either be in the form of a Change Order or Extra Work Order.
- 43.2. A Change Order may be issued by the Procuring Entity to cover any increase/decrease in quantities of original Work items in the contract.
- 43.3. An Extra Work Order may be issued by the Procuring Entity to cover the introduction of new work necessary for the completion, improvement or protection of the project which were not included as items of Work in the original contract, such as, where there are subsurface or latent physical conditions at the site differing materially from those indicated in the contract,

or where there are duly unknown physical conditions at the site of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the Work or character provided for in the contract.

- 43.4. Any cumulative Variation Order beyond ten percent (10%) shall be subject of another contract to be bid out if the works are separable from the original contract. In exceptional cases where it is urgently necessary to complete the original scope of work, the HoPE may authorize a positive Variation Order go beyond ten percent (10%) but not more than twenty percent (20%) of the original contract price, subject to the guidelines to be determined by the GPPB: *Provided, however,* That appropriate sanctions shall be imposed on the designer, consultant or official responsible for the original detailed engineering design which failed to consider the Variation Order beyond ten percent (10%).
- 43.5. In claiming for any Variation Order, the Contractor shall, within seven (7) calendar days after such work has been commenced or after the circumstances leading to such condition(s) leading to the extra cost, and within twenty-eight (28) calendar days deliver a written communication giving full and detailed particulars of any extra cost in order that it may be investigated at that time. Failure to provide either of such notices in the time stipulated shall constitute a waiver by the contractor for any claim. The preparation and submission of Variation Orders are as follows:
- (a) If the Procuring Entity's representative/Project Engineer believes that a Change Order or Extra Work Order should be issued, he shall prepare the proposed Order accompanied with the notices submitted by the Contractor, the plans therefore, his computations as to the quantities of the additional works involved per item indicating the specific stations where such works are needed, the date of his inspections and investigations thereon, and the log book thereof, and a detailed estimate of the unit cost of such items of work, together with his justifications for the need of such Change Order or Extra Work Order, and shall submit the same to the HoPE for approval.
 - (b) The HoPE or his duly authorized representative, upon receipt of the proposed Change Order or Extra Work Order shall immediately instruct the appropriate technical staff or office of the Procuring Entity to conduct an on-the-spot investigation to verify the need for the Work to be prosecuted and to review the proposed plan, and prices of the work involved.
 - (c) The technical staff or appropriate office of the Procuring Entity shall submit a report of their findings and recommendations, together with the supporting documents, to the Head of Procuring Entity or his duly authorized representative for consideration.
 - (d) The HoPE or his duly authorized representative, acting upon the recommendation of the technical staff or appropriate office, shall approve the Change Order or Extra Work Order after being satisfied that the same is justified, necessary, and in order.

- (e) The timeframe for the processing of Variation Orders from the preparation up to the approval by the Procuring Entity concerned shall not exceed thirty (30) calendar days.

44. Contract Completion

Once the project reaches an accomplishment of ninety five (95%) of the total contract amount, the Procuring Entity may create an inspectorate team to make preliminary inspection and submit a punch-list to the Contractor in preparation for the final turnover of the project. Said punch-list will contain, among others, the remaining Works, Work deficiencies for necessary corrections, and the specific duration/time to fully complete the project considering the approved remaining contract time. This, however, shall not preclude the claim of the Procuring Entity for liquidated damages.

45. Suspension of Work

45.1. The Procuring Entity shall have the authority to suspend the work wholly or partly by written order for such period as may be deemed necessary, due to *force majeure* or any fortuitous events or for failure on the part of the Contractor to correct bad conditions which are unsafe for workers or for the general public, to carry out valid orders given by the Procuring Entity or to perform any provisions of the contract, or due to adjustment of plans to suit field conditions as found necessary during construction. The Contractor shall immediately comply with such order to suspend the work wholly or partly.

45.2. The Contractor or its duly authorized representative shall have the right to suspend work operation on any or all projects/activities along the critical path of activities after fifteen (15) calendar days from date of receipt of written notice from the Contractor to the district engineer/regional director/consultant or equivalent official, as the case may be, due to the following:

- (a) There exist right-of-way problems which prohibit the Contractor from performing work in accordance with the approved construction schedule.
- (b) Requisite construction plans which must be owner-furnished are not issued to the contractor precluding any work called for by such plans.
- (c) Peace and order conditions make it extremely dangerous, if not possible, to work. However, this condition must be certified in writing by the Philippine National Police (PNP) station which has responsibility over the affected area and confirmed by the Department of Interior and Local Government (DILG) Regional Director.
- (d) There is failure on the part of the Procuring Entity to deliver government-furnished materials and equipment as stipulated in the contract.
- (e) Delay in the payment of Contractor's claim for progress billing beyond forty-five (45) calendar days from the time the Contractor's claim has been certified to by the procuring entity's authorized representative

that the documents are complete unless there are justifiable reasons thereof which shall be communicated in writing to the Contractor.

- 45.3. In case of total suspension, or suspension of activities along the critical path, which is not due to any fault of the Contractor, the elapsed time between the effectivity of the order suspending operation and the order to resume work shall be allowed the Contractor by adjusting the contract time accordingly.

46. Payment on Termination

- 46.1. If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Procuring Entity's Representative shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.
- 46.2. If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Procuring Entity's Representative shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.
- 46.3. The net balance due shall be paid or repaid within twenty eight (28) days from the notice of termination.
- 46.4. If the Contractor has terminated the Contract under GCC Clauses 17 or 18, the Procuring Entity shall promptly return the Performance Security to the Contractor.

47. Extension of Contract Time

- 47.1. Should the amount of additional work of any kind or other special circumstances of any kind whatsoever occur such as to fairly entitle the contractor to an extension of contract time, the Procuring Entity shall determine the amount of such extension; provided that the Procuring Entity is not bound to take into account any claim for an extension of time unless the Contractor has, prior to the expiration of the contract time and within thirty (30) calendar days after such work has been commenced or after the circumstances leading to such claim have arisen, delivered to the Procuring Entity notices in order that it could have investigated them at that time. Failure to provide such notice shall constitute a waiver by the Contractor of any claim. Upon receipt of full and detailed particulars, the Procuring Entity shall examine the facts and extent of the delay and shall extend the contract time completing the contract work when, in the Procuring Entity's opinion, the findings of facts justify an extension.

- 47.2. No extension of contract time shall be granted the Contractor due to (a) ordinary unfavorable weather conditions and (b) inexcusable failure or negligence of Contractor to provide the required equipment, supplies or materials.
- 47.3. Extension of contract time may be granted only when the affected activities fall within the critical path of the PERT/CPM network.
- 47.4. No extension of contract time shall be granted when the reason given to support the request for extension was already considered in the determination of the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection.
- 47.5. Extension of contract time shall be granted for rainy/unworkable days considered unfavorable for the prosecution of the works at the site, based on the actual conditions obtained at the site, in excess of the number of rainy/unworkable days pre-determined by the Procuring Entity in relation to the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection, and/or for equivalent period of delay due to major calamities such as exceptionally destructive typhoons, floods and earthquakes, and epidemics, and for causes such as non-delivery on time of materials, working drawings, or written information to be furnished by the Procuring Entity, non-acquisition of permit to enter private properties or non-execution of deed of sale or donation within the right-of-way resulting in complete paralyzation of construction activities, and other meritorious causes as determined by the Procuring Entity's Representative and approved by the HoPE. Shortage of construction materials, general labor strikes, and peace and order problems that disrupt construction operations through no fault of the Contractor may be considered as additional grounds for extension of contract time provided they are publicly felt and certified by appropriate government agencies such as DTI, DOLE, DILG, and DND, among others. The written consent of bondsmen must be attached to any request of the Contractor for extension of contract time and submitted to the Procuring Entity for consideration and the validity of the Performance Security shall be correspondingly extended.

48. Price Adjustment

Except for extraordinary circumstances as determined by NEDA and approved by the GPPB, no price escalation shall be allowed. Nevertheless, in cases where the cost of the awarded contract is affected by any applicable new laws, ordinances, regulations, or other acts of the GoP, promulgated after the date of bid opening, a contract price adjustment shall be made or appropriate relief shall be applied on a no loss-no gain basis.

49. Completion

The Contractor shall request the Procuring Entity's Representative to issue a certificate of Completion of the Works, and the Procuring Entity's Representative will do so upon deciding that the work is completed.

50. Taking Over

The Procuring Entity shall take over the Site and the Works within seven (7) days from the date the Procuring Entity's Representative issues a certificate of Completion.

51. Operating and Maintenance Manuals

51.1. If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.

51.2. If the Contractor does not supply the Drawings and/or manuals by the dates stated in the SCC, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative shall withhold the amount stated in the SCC from payments due to the Contractor.

Section V. Special Conditions of Contract

GCC Clause	
1.17	The Intended Completion Date is <i>Three Hundred (300) Calendar Days from the issuance of the Notice to Proceed (NTP).</i>
1.22	The Procuring Entity is General Mariano Alvarez (GMA) Water District, Lot 1, Block 4, Barangay Poblacion 2, General Mariano Alvarez, Cavite
1.23	The Procuring Entity's Representative is : <i>BAC Chairman: Jovic A. Calvadores</i> <i>GMA Water District, GMA, Cavite</i>
1.24	The Site is located at <i>Sitio Rollinghills, Brgy. F. de Castro, GMA, Cavite</i>
1.28	The Start Date is <i>preferably a week after the issuance of the NTP.</i>
1.31	The Works consist of Construction, Supply, Installation, Commissioning and Process Proving of 15 CMD Septage Treatment Plant and Supply and Delivery of 2 units 3.5 cu.m. Capacity Septage Vacuum Trucks and other work items as specified in the Bill of Quantities and the Specifications
2.2	<i>There are no sectional completion, the whole project must be accomplished within 300 days upon receipt of the Notice to Proceed.</i>
5.1	The Procuring Entity shall give possession of all parts of the Site to the Contractor <i>upon issuance of the Notice to Proceed.</i>
6.5	The Contractor shall employ the following Key Personnel : <i>[List key personnel by name and designation]</i> <i>NOTE: The names of the Key Personnel and their designation shall be filled out by winning contractor prior to contract signing.</i>
7.4(c)	No further instructions.
7.7	No further instructions.
8.1	No further instructions.
10	None
12.3	No further instructions.
12.5	<i>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,</i>

	<i>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.</i>
13	No additional provision <i>or, if the Contractor is a joint venture, “All partners to the joint venture shall be jointly and severally liable to the Procuring Entity.”</i>
18.3(h)(i)	No further instructions.
21.2	A representative from the Construction Industry Arbitration Commission.
29.1	No dayworks are applicable to the contract.
31.1	The Contractor shall submit the Program of Work together with the Financial Bid.
31.3	The period between Program of Work updates is <i>Seven (7) days</i> . The amount to be withheld for late submission of an updated Program of Work is <i>Two Thousand Pesos (Php 2,000.00)</i> .
34.3	The Funding Source is the <i>GMAWD General Fund</i>
39.1	The amount of the advance payment is <i>15% of the Contract Price</i>
40.1	No further instructions.
51.1	The date by which operating and maintenance manuals are required is <i>30 days after project acceptance</i> . The date by which “as built” drawings are required is <i>30 days after project completion</i>
51.2	The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is <i>Php 30,000.00</i>

Section VI. Specifications

I. PERFORMANCE SPECIFICATION FOR THE SEPTAGE TREATMENT PLANT (SPTP)

II. MATERIALS SPECIFICATIONS

III. VACUUM TRUCK SPECIFICATIONS

I. PERFORMANCE SPECIFICATION FOR THE SEPTAGE TREATMENT PLANT (SPTP)

1.0 SCOPE OF WORK

1.1 GENERAL

The SpTP shall treat septage collected from the General Mariano Alvarez Water District (GMA WD) service area and other contingent areas designated by GMA WD within the catchment area.

All processes and facilities shall be designed to meet the performance requirements of the overall treatment plant. In particular, the plant must be operated in automatic mode, consist of programmable logic controller (PLC), a Motor center, and a control panel. The PLC shall be able to coordinate all of the activities of the process equipment. The inter-connections between various equipment and processes, support system and other structures must be an integrated approach, which meets operational performance, flexibility, maintenance and reliability criteria.

The STP works shall include but not be limited to the following:

- The design and construction of the Septage Treatment Plant (SpTP)
- Commissioning, performance testing, and training of operators
- Operations and maintenance for the commissioning period of one (1) month and the process proving period of one (1) month
- All other works needed to obtain a complete and correctly functioning plant.

It is the intent of this scope of works that the SpTP shall be suitable in every way for the service required, and the Contractor shall supply all materials, labor, equipment

and do all work which may be reasonably implied as being required, at no additional cost to GMAWD.

1.2 SITE AND AREA AVAILABLE FOR THE SEPTAGE TREATMENT PLANT

The site for the SpTP is located in Sitio Rollinghills, Brgy. F. de Castro, GMA, Cavite with a lot area of 2,790 square meters. The geotechnical reports shall be given to the Contractor while the supplemental topographic and utility surveys that may be required shall be to the account of the Contractor.

1.3 PLANT OPERATING PERIODS AND INFLUENT CHARACTERISICS

In general, the preliminary treatment of septage consisting of solids separation and dewatering shall operate at a minimum of 240 days per year (not including weekends, holidays, and planned maintenance schedules or downtimes) and there shall be one (1) - 8 hour shift per day. However, the secondary treatment component, which is a biological process, shall be operated on a continuous basis, i.e., 24 hours per day for 365 days per year.

The design and construction of the facilities shall be based on the total septage collected from the entire GMA WD service area and nearby towns. The septage characteristics are as summarized in Table 1. The Contractor shall design, construct, supply, and install all civil works and electro-mechanical facilities to meet the design capacity.

The average capacity shall be 15 cmd of septage. The dewatering unit shall be screw press dewatering unit or similar unit for simplicity of operation and low power consumption, capable to handle 2CMH flow rate. It shall be a system complete with its appurtenances that includes the sludge feed pumps, chemical treatment provisions, filtrate pump and auxiliaries, and the power and control panels.

Table 1: Design Flow.	
Design Flow	Design Capacity
Average Flow	15 m ³ /day

Table 2: Septage Influent Characteristics.		
Parameter	Unit	Concentration Range
BOD	mg/l	3,000 to 5,000
COD	mg/l	10,000 to 15,000
Oil and Grease	mg/l	1,000 to 1,500
Moisture Content	%	95 to 98
TSS	g/l	10 to 40
Ammonia-N	mg/l	500 to 700

**Note: Estimated characteristics of septage from GMA WD service area.*

1.4 REQUIRED TREATMENT PLANT PERFORMANCE

1.4.1 The SpTP plant shall produce dewatered sludge within an average DS content range of 15 to 20%.

1.4.2 The SpTP shall produce an effluent conforming to ALL national government standards (i.e., for Class C Inland Water). Some effluent limits are shown in Table 3a and 3b.

Table 3a: Effluent Quality Limits.		
Parameter	Units	Effluent Limits
Color	PCU	150
pH		6.5 to 9
COD	mg/L	100
5-day 20°C BOD	mg/L	50
Total Suspended Solids	mg/L	100
Oil and Grease	mg/L	5
Ammonia	mg/L	0.5
Nitrate as NO ₃ -N	mg/L	14
Phosphate	mg/L	1
Phenolic Substances	mg/L	0.5
Fecal Coliforms	MPN/100 ml	400

Total Coliforms	MPN/100 ml	10,000
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Table 3b: Effluent Quality for Water Re-Use (USEPA 2004)		
Parameter	Units	Effluent Limits
Ph	-	6.5 to 9
5-day 20°C BOD	mg/L	≤10
Turbidity	NTU	≤2
Fecal Coliform	MPN/100mL	0
Residual Chlorine	mg/L	1

- 1.4.3 The plant itself shall be free from discernible odor and noise which must meet DENR standards on noise levels (ambient and source-specific standards). Please refer to the standards being adopted by the DENR and DOLE on noise limits. In case of non-compliance, the Contractor shall make revisions of their design to meet the requirements without additional cost to GMA WD.
- 1.4.4 It must be designed to resume its normal operation after a power interruption, even if unmanned, without causing damage to or undue shortening the economic life of the electric motors.

Table 4: Maximum Allowable Noise Levels in General Areas.			
Category of Area	Day Time (9 am – 6 pm)	Morning (5 am – 9 am) and Midnight (10 pm – 5 am)	Evening (6 pm – 10 pm)
A	55 dB	50 dB	45 dB

Notes:

- *SpTP site is under Class A (section or contiguous area that is primarily used for residential purpose)*
- *See IRR of Chapter 18 of P.D. 856 – Sanitation Code of the Philippines Section 8.7.4 for more clarifications (See Section IX Page 165)*

- 1.4.5 The design criteria of the various components of the SpTP shall be designed within the limits of the parameters specified in this specification. However, if it can be shown that significant savings can be attained outside the limits of the design parameters, such proposal may be considered.

1.5 MINIMUM DESIGN PROVISIONS

1.5.1 General Requirements

- 1.5.1.1 The SpTP must be designed for a maximum total plant shutdown time of 24 hours for maintenance every week.
- 1.5.1.2 Plant structures shall be designed to withstand pressures and seismic loading. For structural concrete, the 28-day compressive strength shall not be less than 24 MPa for general structure and water retaining structures.
- 1.5.1.3 The electrical/instrumentations control system shall include main and branch circuit breakers, starters, contactors, variable speed drives and reset buttons selector switches, push buttons and pilot lights, circuit control items for electrical control or liquid level control of the various plant components and all necessary wiring and conduits. All electrical/instrumentations controls shall be wired so that the plant equipment can be operated either manually or automatically using PLC to achieve the intended sequence of operation and for remote monitoring purposes. All electrical controls for all processes shall be at the Motor Control Centers and located in buildings.
- 1.5.1.4 Electrical components of mechanical equipment and systems shall be provided as necessary for complete and operable systems. Interconnecting wiring for factory-wired plant components shall be provided as an integral part of the plant.
- 1.5.1.5 The SpTP finish ground elevation shall be one (1) meter above the maximum flood level on the basis of a ten (10) year period.
- 1.5.1.6 Sumps and chemical mixing tanks must be covered.

1.6 SPECIFIC DESIGN PROVISIONS FOR THE SEPTAGE PLANT

The following provisions cover specific facilities but do not preclude provision of other facilities that may be required in attaining the required SpTP performance requirements/efficiencies.

1.6.1 Equipment

Whenever possible and applicable, all equipment shall be installed indoors or have provisions for cover to prevent them from being wet during rainy seasons and potentially shorten their usable lives.

1.6.2 Flow Measurement

Flow meters shall be installed, in the following locations:

- Full bore magnetic flowmeter for septage acceptance port – after the macerator, before the sludge acceptance units and sludge inlet of the dewatering unit
 - Full bore magnetic flow meters display at the control station should show flow rate and total volume flow. Display of flow rate and total flow shall also be displayed at loading bay, visible to the vacuum tanker drivers and plant operator. Resetting of total flow at loading bay, by the plant operator, should be possible.

- Water meter for effluent discharge
 - Water meter for the effluent discharge shall display total volume reading for reporting.

1.6.3 Preliminary Treatment Unit

The SpTP shall have an automatic screening, compacting, and washing system of removed solid wastes, trash and other floating solids/debris that may have entered before the treatment. It shall also have a sand and grit removal system that will allow smooth operation of the downstream processes.

1.6.4 Secondary Treatment Unit

The SpTP shall be made with a sequential batch reactor aerated system controlled by PLC which can run without supervision during the night.

1.6.5 Tertiary Treatment Unit

The SpTP shall have a disinfection unit capable of eliminating pathogenic microorganisms and odor in the effluent prior to discharge. The disinfection chemicals should not carry by-products such as chloramines, THM's etc that could remain and contaminate the receiving body of water.

1.6.6 Water Re-Use (Optional)

The treated effluent shall be used at the septage receiving area to wash the recovered trash and other solid waste before it enters the collecting bags and for the wash cycle of the sludge dewatering unit. The treated effluent may also be used for other applications within the septage treatment plant.

1.6.7 Mass Balance and Process Flow Diagram

The Bidder shall present the mass balance (water flow, chemical used, biomass recycling and wasting, etc.) in the process worksheet for the entire SpTP system with directions of flows (inlet and outlet), chemical dosing lines and wastages or by-products. In a separate sheet, all specifications of major equipment (pumps, blowers, etc) must be clearly indicated in the process diagram.

1.7 PROCESS PERFORMANCE TEST AND GUARANTEE

- 1.7.1 Prior to acceptance of the SpTP the Contractor shall, for thirty (30) consecutive days, demonstrate that the completed SpTP is capable of treating septage in compliance with Table 3 at the given initial plant loading. The process proving period of one (1) month shall start upon the commissioning period.
- 1.7.2 During the process proving period of one (1) month, daily influent and effluent monitoring must be done by the Contractor. The following are the minimum data that must be submitted:
- Process related (e.g. flow, influent and effluent COD, SVI, MLSS and other treatment criteria) including actual laboratory results
 - Inputs and outputs (power, chemical dosages, fuel consumptions, etc)
 - Manpower deployment, including janitorial and security
 - Reactive and preventive maintenance records
 - OPEX
 - Daily incidents
- 1.7.3 Within the process proving period of one (1) month, weekly effluent sampling and analysis shall be undertaken by a third party DENR accredited laboratory (with split sampling to be conducted by the Contractor). The schedule, timing and manner of sampling shall be determined by GMA WD.

- 1.7.4 The Contractor may make some modifications on the SpTP and repeat the test until the operation cost is brought down to the level of the projected operation cost. Costs of all modifications shall be to the account of the Contractor. Any modification should be pre-approved by GMA WD.
- 1.7.5 The Contractor shall be responsible for making all the necessary remedial measures within 60 calendar days after the first test period to bring the plant performance efficiency to the specified level at no additional cost to the Employer, except when the cause of not meeting the specified level of efficiency is when the actual plant loading is more than the specified plant loading or if the actual concentrations of the septage constituents are higher than those given in Table 2 of this Performance Specifications.

1.8 CONSTRUCTION AND SHOP DRAWINGS

- 1.8.1 The drawings shall show the complete assembly of the plant with all components, equipment and parts, each with an assigned number corresponding to the plant spare parts list. The layout shall also indicate the relative location with respect to the boundary of the lot allocated for the plant.
- 1.8.2 The drawings shall also show construction details for each component, piece of equipment, support structures and access facilities.
- 1.8.3 The construction drawings shall be size A1 and shall show the complete construction and assembly of the plant with all components.

1.9 BID DRAWINGS

- 1.9.1 The drawings to be submitted with the bid shall be in size A3 (folded to size A4) and shall show the complete assembly of the plant with all components, equipment and parts, each with an assigned number corresponding to the plant parts list. The layout shall also indicate the land area required and its relative location with respect to the boundary of the lot allocated for the SpTP.

1.10 OPERATION AND MAINTENANCE MANUAL AND LIST OF SPARE PARTS

- 1.10.1 The winning bidder shall prepare and submit a draft Operation and Maintenance Manuals with lists of Spare Parts for all equipment of the plant, one (1) week prior to the scheduled date for commissioning.
- 1.10.2 Supply completed Operation and Maintenance Manuals within two weeks of receiving review comments in the form of two digital copies on CD and four hard copies. Produce digital copies using the latest versions of Word and AutoCAD with supplementary drawing and image files in .pdf format.

- 1.10.3 Assemble manuals in metric, A4 three ring binders with durable hard covers and of sufficient size for the information contained.
- 1.10.4 Drawings shall be assembled between metric A3 size covers and held together using three removable brass male/female screws. Produce all drawings in A3 size.
- 1.10.5 The Operation and Maintenance Manuals shall:
- Cover all aspects of the works.
 - Provide ‘General Principles of Operation’ for the plant. The General Principles of Operation shall be prepared by the designers and include the necessary information for operators to effectively operate and maintain the works.
 - Incorporate safety, environmental and quality issues.
 - Be specifically prepared for the GMA WD SpTP.
 - Have detailed indexes and cross referencing.

1.10.6 OPERATION MANUAL

1.10.6.1 A single operation manual shall be provided for the operation of the plant. The contents of the manual shall include but not be limited to:

- Title Page: Project, Employer’s name, address and telephone number Contractor’s name, address and telephone number, and Contract Number.
- Index: Include a comprehensive index
- General Description
 - Location
 - Site layout, Process and instrumentation diagrams, Hydraulic profile
 - Description of Process and Effluent Criteria
 - Design Criteria
- Safety Management
- Environmental Management
- Detail Operation (for each process unit)
 - Describe each process unit including size and number of mechanical/electrical units
 - How it operates (Start, Shutdown, Manual and Auto Control)
 - Performance criteria for each process unit
 - Sampling points
 - Troubleshooting
- Record Keeping Requirements
- Duty Statements (for operators)
- Operating Procedures (covering safety and environmental procedures)
- Environmental and Emergency Response

- Sampling and Monitoring Requirements
 - Includes performance criteria for each process unit
 - Monitoring of the receiving environment (waterways, noise and odors)
- Cross Reference to Maintenance Manuals

1.10.6.2 Provide Maintenance Manuals to support the Operations Manual for all mechanical and electrical equipment

1.10.7 MAINTENANCE MANUALS

1.10.7.1 Prepare maintenance manuals for all individual items of equipment. The content of the manuals shall include but not be limited to:

- Title Page: Project, Employer’s name, address and telephone number, Contractor’s name, address and telephone number, and Contract Number.
- Index: Include a comprehensive index
- Description - a full description of the equipment with a tabulation of dimensions and performance ratings
- Principles of Operation - basic working description, including novel features and any automatic control.
- Operating Instructions - a step-by-step procedure organised in sections entitled:
 - Check before starting
 - Starting
 - Continuous operation
 - Stopping
 - Emergency stopping
 - Abnormal operation (as applicable)
- Installation and Commissioning Instructions - details of standards and procedures for transporting and installing the equipment. Including a step by step procedure for mounting or erecting, wiring and lubricating the equipment. Alignment tolerances and check requirements shall be stated.
- The commissioning instructions shall include step by step procedures for checks before the first start, checks after starting and operational tests.
- Routine Maintenance - step by step procedure for preventive maintenance work carried out at intervals or two weeks or less.
- Periodic Maintenance - step by step procedure for fault correction and preventive maintenance carried out at

intervals in excess of two weeks, involving replacement of consumables. A list of any necessary special tools shall be included.

- Repair, Overhauling and Dismantling - step by step procedures to extract, fully dismantle, re-assemble and re-install the equipment.
- Test Data and Troubleshooting - instructions to qualified tradesmen for assessing the operational performance of the equipment.
- Spare Parts List - illustrations and schedules for identification and specifications of all items in the equipment. Exploded diagrams are required. The recommended spare parts stock must be indicated.

2.0 PLANT DESCRIPTION AND REQUIRED FACILITIES

2.1 GENERAL

All processes and facilities shall be designed to meet the performance requirements of the overall plant. In particular, the inter-connection between various plant, support services and structures must be an integrated approach, which meets operational performance, flexibility, maintenance and reliability criteria.

The Septage Treatment Plant as envisioned will contain the following Main Process Systems, Support Systems and Facilities:

Main Process Systems

- Septage Tanker Unloading Bay
- Rock Trap
- Macerator
- Package Treatment Unit with trash and grit removal system
- Septage Holding Tanks with Hyperbolic Mixer
- Dewatering Feed Pumps
- Chemical Treatment Unit
- Sludge Dewatering Unit
- Sludge Tank
- Scum Trap System
- Equalization Tank with Hyperbolic Mixer

- Sequencing Batch Reactor System
- Chemical Treatment System
- Effluent Disinfection System
- Transfer Pumps
- Filtration Systems
- Flow Meters

Support Systems

- Potable Water
- Treated Water
- Electrical and Control System
- Generator Set

Facilities

- Control and Instrumentation Room
- Structural provisions for Receiving and Dewatering Units
- Sludge Cake Storage
- Genset Room
- Chemical and Supplies Storage Room
- Laboratory Room

2.2 MAIN PROCESS SYSTEMS

2.2.1 Septage Tanker Unloading Facilities

Each septage unloading bay shall be provided with quick-connection ports for connection to vacuum tanker discharge hoses. The whole unloading bay shall be open, but provided with a roof to protect personnel from rain while connecting/disconnecting the hoses to the ports.

There shall be at least one (1) unloading points for connection of vacuum tanker discharge hoses. This unloading point shall be connected to one (1) sludge acceptance unit. The connection point shall feature quick connection couplings, flow metering and control.

The unloading points shall feature Camlock quick-connection fittings with non-return valves, flow metering and control, for the connection of vacuum tanker discharge hoses. Spill pit with grating and properly designed grit and trash trap shall be constructed below unloading points to ensure efficient collection of spillage during unloading. Spillage shall be conveyed through a holding tank with sufficient capacity and shall be pumped to desired process stage.

The couplings shall be installed at a suitable height for ready access and operation by the tanker drivers and directly connected to Rock Trap system. This allow the settling of heavy objects like stones, rebars, gravel that might damage equipment down the line. The unloading operation shall be using the discharge pump from the tankers or by gravity for larger trucks.

Macerator machine will follow the rock trap to grind the trash. The macerator unit comes with separate control panel with PLC to control the reversing in rotation in case hard material gets caught with the Macerator.

A full-bore magnetic flow meter shall be installed after each Macerator to allow simultaneous vacuum trucks unloading. The display shall be included at the control station for two functions:

- Instantaneous flow rate in l/s
- Totalized volume

Total unloading read by the flowmeter shall be noted for recording and billing purposes.

2.2.2 Package Treatment Unit

2.2.2.1 General

Provide Package Treatment Units (PTU) in a complete system to perform the preliminary treatment of the raw septage sludge. It is a completely sealed unit with a vent port to attach to a scrubber system. Provide complete packaged units each consisting of:

- Mechanically-cleaned screen
- Screw type screenings compactor with washing
- Grit trap
- Grit classifier
- Oil and grease skimming system
- Flowmeter
- Trash and Grit Chute
- Air blower
- Integrated supports
- Pipe lines and conduits
- Electrical switchboard and control panel

The instantaneous capacity of one PTU shall be at least 10LPS to be able to cater for a quick sludge discharge from one tanker truck. Main machine parts including the conveyance systems (when applicable) must be stainless steel with a minimum grade of Type 304. Compaction screw should be made of special alloy steel. Other components like gearmotor drives must be with a proven reliability and lifetime under these particular operational conditions.

Compacted and washed screenings shall be discharged via enclosed discharge chutes into an enclosed and inclined conveyor into separate industrial bags or sacks. The screened and de-gritted septage shall be discharged by gravity pipework into a Holding Tank

The PTU and the respective electrical controls as well as flow metering shall be prepared for the future upgrading with electronic card readers that identify truck off-loading time and the amount of septic sludge offloaded, which will then be recorded to a central computer in the control room.

2.2.2.2 Mechanically-Cleaned Screen with Screenings Compaction

Incorporate a continuous or automatic mechanical screen cleaning in the unit with perforation or spacing range of 5mm – 8mm. An integrated inclined screw screenings press capable of a screenings removal rate of approximately 2 cubic meters per hour on a continuous basis with a dry solids content of 40%. Provide a discharge system and chutes to accurately discharge screenings to the screenings bags. Do not allow free fall of screenings external to the unit or escape of screenings.

2.2.2.3 Grit Trap Tank

Provide a grit trap tank section in the PTU with volume capacity enough to allow settling of sand and grit. It should be capable of removing at least 95% of grit equivalent to sand of 0.3 mm diameter and at maximum flow. Incorporate an air diffuser agitation system for continuous agitation to prevent septage from manually operated drain at the lowest point of the unit.

2.2.2.4 Grit Conveyor and Extractor

Incorporate an inclined screw grit classifier capable of a grit removal rate of at least 0.3 cubic meters per hour on a continuous basis with a dry solids content of 4%. Provide a discharge system and chutes to accurately discharge grit to the

grit bags. Do not allow free fall of grit external to the unit or escape of grit.

2.2.2.5 Integrated Supports

Fabricate the septage acceptance units to include an integrated system of support brackets and foundation legs that enable it to stay to a concrete surface. Manufacture the supports from the same material as the body of the acceptance units. Ensure the supports allow transport and movement of the acceptance units without the need for disassembly or additional bracing.

Include provision for control of vibration and for electrical grounding as may be necessary in the design of the supports.

2.2.2.6 Pipelines and Conduits

Include all pipelines and conduits needed to form a complete and correctly functioning septage receiving and treatment system. Locate the pipelines associated with the tanker unloading system above ground. Locate all other pipelines below ground with connections to the acceptance units neatly made directly below the appropriate points. Design pipelines with sufficient grade and to allow access for maintenance. Include fittings to allow routine sampling of septage both before and after the acceptance units.

Provide electrical conduits below ground linking the main switchboard, the acceptance units and the local control stations. Terminate the electrical conduits within the area of the integrated supports for the acceptance units.

Include water supply standpipes with hoses within the building and in close proximity to the acceptance units for maintenance. The concrete floor of the package treatment area shall be a grated sump with a grit/sand trapped outlet to the septage transfer pump or directly to the Septage Holding Tank.

2.2.2.7 Electrical Switchboards and Control Panel

Provide a single electrical switchboard and control panel for each septage acceptance unit. Locate the panel near the acceptance unit. Arrange for the panel to provide all power, control and instrumentation requirements for the complete functioning of the septage acceptance system.

Include provision for automatic and manual operation, suitable push-buttons and displays on the front of the station to enable checking of functions, identification of faults and manual operation, flowmeter displays and links to the overall plant control system.

Supply the panel in a protective enclosure that will allow water from hoses to be directed onto the cabinet during maintenance cleaning operations.

2.2.3 Sludge Holding Tanks

2.2.3.1 Provide two (2) holding tanks for the screened septage ready for dewatering and other one is for receiving of the hauling for the day, each with an active volume of at least 15 cubic meters, for storage and mixing of screened and de-gritted sludge and storage of any waste sludge from the biological treatment. Tank cover mounted Hyperbolic Mixers shall be provided in each holding tanks for ease in drive unit maintenance. Mixing is to ensure homogenous feed to the dewatering equipment. The mixers size should be able to re-suspend settled material following a disruption in mixer operation. A decanter pump should be in-place to allow withdrawal of supernatant liquid in the event the septage hauled is watery or below 1% solids content.

2.2.3.2 Under normal conditions operate the tanks on an alternating basis with one tank fully mixed and supplying feed to the sludge dewatering system and one tank in settlement mode receiving septage sludge and waste activated sludge.

2.2.3.3 Construct the tanks from concrete and finish the internal surfaces by smooth plastering to eliminate areas for solids to deposit.

- 2.2.3.4 Install at least one electrically driven shafted hyperbolic mixers to each tank to completely mix the tank contents and provide homogeneous feed to the dewatering system. Size the mixers to ensure suspension of settled material following any period of interruption to mixer operation. Mount the mixers at the center of the tank. Suspended shaft should be stainless steel 304.
- 2.2.3.5 Equip the tanks with manhole large enough to accommodate the passage of the hyperbolic impeller if servicing is needed.
- 2.2.3.6 Include suitable arrangements for level control within the tanks using non-contact ultrasonic instruments. Use the level control instruments to assist operation of the sludge transfer pumps, the sludge dewatering pumps and the waste activated sludge pumps. Display the tank levels at ground level near the tanks.
- 2.2.3.7 Provide pipework with valves at ground level to allow a full range of functions and protection for the tanks. Include inlets from the septage transfer pumps and the filtrate pumping station, interconnecting pipework to allow series operation, outlets to the sludge dewatering system, inlets for waste activated sludge from the biological treatment system, outlets for clear wastewater discharge to the biological treatment system, scour outlets from the lowest point of the floors and overflows.
- 2.2.3.8 Prevent odor nuisance from the tanks. Provide air suction pipework above top of tank and connect to the air scrubber system.

2.2.4 Sludge Dewatering System

- 2.2.4.1 Provide a Screw Press Type of dewatering unit or approved equal with a minimum of 2m³/hr capacity. Include the required as a complete system to perform the separation of mixed septage including the intermittent activated sludge wastes from the SBR System and to produce a sludge cake with not lower than 15% dryness. Provide complete packaged units each consisting of:
 - 2.2.4.1.1 Sludge pumps
 - 2.2.4.1.2 Chemical dosing pipework
 - 2.2.4.1.3 Flocculation Reactor
 - 2.2.4.1.4 Sludge Dewatering unit
 - 2.2.4.1.5 Filtrate recycle system
 - 2.2.4.1.6 Integrated supports
 - 2.2.4.1.7 Pipe lines and conduits
 - 2.2.4.1.8 Electrical switchboard and control panel

- 2.2.4.2 Incorporate all functions in each unit for a compact and complete system. Cover each entire unit and connect to the odor control system. Provide capacity to produce sludge cake from the entire plant flow of septage and waste activated sludge.
- 2.2.4.3 Enclose the units in a building with a security barrier between the units and the sludge cake handling area. Provide normally locked double hinged gates for access to plant and equipment and single gates for operator access.
- 2.2.4.4 Discharge dewatered sludge to the solids stabilization system. Provide a standby bagging system with sufficient stock of bags for one month of operation at full plant capacity.
- 2.2.4.5 Fabricate casings, frames, pipelines and all components from stainless steel, generally of grade 316 but with a minimum of grade 304 for certain small components.

2.2.5 Dewatering Feed Pumps

- 2.2.5.1 Provide a dewatering feed pump system suitable for handling of septage and sludge with two pumps (1 Duty, 1 Standby) allocated for sludge dewatering unit. Install slurry duty hardened impeller submersible for consistent flow rate regardless of solids content of the sludge. Design individual pump capacity to suit the preferred each sludge dewatering unit. Equip pumps with variable frequency drives to control the flow rate connected to the plant control system.. Interlock operation of the pumps with the holding tanks level and the dewatering unit.

2.2.6 Chemical Dosing Pipework

- 2.2.6.1 Provide pipework between the dewatering feed pumps and the Flocculation Reactor Tank leading to sludge dewatering unit. Incorporate fittings for isolation, measurement of flow, dosing of chemical solutions for polyelectrolyte, injection of filtrate return flow and sampling. Ensure sufficient length of pipework to allow correct operation including chemical dispersion and flow measurement.
- 2.2.6.2 Measure flow with full-bore magnetic flowmeters. Include display at the control station for two functions:
 - An instantaneous flow rate L/s
 - Total Flow in liters for the particular dewatering unit

2.2.7 Flocculation Static Mixer

2.2.7.1 Provide a flocculation static mixer at the head of the dewatering unit to achieve adequate contact and mixing time between the sludge and chemicals.

2.2.7.2 Ensure adequate size, sufficient freeboard and overflow arrangements to prevent surge or spillage on start and stop of dewatering feed pumps. Include a scour outlet.

2.2.8 Sludge Dewatering Unit

2.2.8.1 Incorporate a Screw Press dewatering unit or approved equal capable of removing all sludge solids generated by the plant in no more than 80 hours per week. Produce sludge cake with dry solids content in the range of at least 15% to 25% and with polyelectrolyte consumption not exceeding 10kg/kg of dry sludge.

2.2.8.2 Provide a discharge system and chutes to accurately discharge sludge to the solids stabilization system. Do not allow free fall of sludge external to the unit or escape of sludge in either liquid or solid forms.

2.2.9 Filtrate Scum Trap

2.2.9.1 Provide a system for the capture of scum and carryovers going through with the filtrate. Provide easy access and removal of accumulated scum by simply overflowing via gravity or skimmer pump that takes back to the sludge holding tank. Construct a minimum of 2 compartment-baffled tank that can handle 30% more on the total dewatering capacity.

2.2.10 Integrated Supports

2.2.10.1 Fabricate the sludge dewatering units to include an integrated system of support brackets and foundation legs that enable anchoring to a concrete surface. Manufacture the supports from the same material as the body of the dewatering units. Ensure the supports allow transport and movement of the dewatering units without the need for disassembly or additional bracing.

2.2.10.2 Include provision for control of vibration and for electrical grounding as may be necessary in the design of the supports.

2.2.11 Pipelines and Conduits

- 2.2.11.1 Include all pipelines and conduits needed to form a complete and correctly functioning sludge dewatering system.
- 2.2.11.2 Locate pipelines generally below ground with connections to the dewatering units neatly made directly below the appropriate points. Design pipelines with sufficient grade and to allow access for maintenance. Include fittings to allow routine sampling of sludge and filtrate both before and after the dewatering units.
- 2.2.11.3 Provide electrical conduits below ground linking the main switchboard, the dewatering units and the local control stations. Terminate the electrical conduits within the area of the integrated supports for the acceptance units.
- 2.2.11.4 Include water supply standpipes with hoses within the building and in close proximity to the dewatering units for maintenance. Grade the concrete floor of the dewatering unit area to a grated sump with a trapped outlet to the sludge transfer sump.

2.2.12 Electrical Switchboard and Control Panel

- 2.2.12.1 Provide a single electrical switchboard and control panel for each sludge dewatering unit. Locate the panel near the dewatering unit. Arrange for the panel to provide all power, control and instrumentation requirements for the complete functioning of the sludge dewatering system.
- 2.2.12.2 Include provision for automatic and manual operation, suitable push-buttons and displays on the front of the station to enable checking of functions, identification of faults and manual operation, flowmeter displays and links to the overall plant control system.
- 2.2.12.3 Supply the panel in a protective enclosure that will allow water from hoses to be directed onto the cabinet during maintenance cleaning operations.

2.2.13 Anoxic Treatment Tank

- 2.2.13.1 Receives the filtrate water where it will undergo biological treatment

2.2.13.1 Receives the overflow water from the anaerobic treatment tank where it will be treated. An overflow line leads the treated water to the Equalization Tank. A hyperbolic mixer or similar agitation method is to be used for anoxic treatment mixing to effectively.

2.2.14 Equalization Tank

2.2.14.1

Provide two pumps arranged on a duty/standby/parallel basis. Match the pump capacities to avoid excessive numbers of starts for the pumps.

2.2.14.2 Provide sufficient electric cable to allow removal to ground level without the need to disconnect.

2.2.14.3 A suitable air diffusers should be installed for aerated mixing need. Include suitable arrangements for level control within the pumping station using float ball type switch.

2.2.14.4 Provide an emergency overflow at high level in the pumping station with a pipeline discharging to the SBR or Holding Tanks.

2.2.15 Biological Treatment System

2.2.15.1 Provide a complete biological treatment system equipped with Sequencing Batch Reactor biological treatment system to receive filtrate from septage treatment as well as sewage and process overflows from the plant site and produce final treated wastewater effluent meeting the specified new DENR Class C discharge quality criteria.

2.2.15.2 Base the design of the biological treatment system on an anoxic and activated sludge process. Construct the reactors in concrete.

2.2.15.3 Equip the reactors with automatically operated inlet pipe arrangements, aeration systems, and waste activated sludge removal systems.

2.2.15.4 Include facilities for scum suppression and withdrawal for disposal with the waste activated sludge.

- 2.2.15.5 Provide a waste activated sludge pumps arranged on a duty/standby/parallel basis. Ensure sufficient range of capacity to allow withdrawal of waste activated sludge during either the aeration or settlement phases of the biological process.
- 2.2.15.6 Supply the aeration systems with membrane type diffusers tubular or disc type with air supplied by blower system or submersible aerators of any other means of bottom air introduction system.
- 2.2.15.7 If blower system is opted, a completely enclosed blower system is needed for quiet operation. Provide at least two blowers arranged on a duty/standby basis. Locate the blowers in a suitably ventilated building with additional noise suppression features. It can be housed together with the Power Generating unit.
- 2.2.15.8 Provide blowers able to deliver the full process air requirements against the maximum system air pressure under the full range of plant ambient conditions. Ensure automatic capability for continuous operation under conditions of reduced operational air demand, lower system pressures and varying ambient conditions without throttling or significant loss of overall operating efficiency.
- 2.2.15.9 Provide at dissolved oxygen instruments in aeration tank for automatic control of the submerged jet aerators. Operate the system to sustain a dissolved oxygen set point selected by the operator.
- 2.2.15.10 Equip the facility with walkways, platforms, handrails and cages to allow safe access to the structures for operations staff. Locate standpipes and hoses on the walkways for maintenance.
- 2.2.15.11 The Sequential batch reactor or its equivalent shall have provisions for the treatment or removal of nitrates in the water being treated. The process controlled by PLC which can run without supervision capable of removing carbonaceous BOD that complies with Table 3. The aeration system should be as quiet as possible to eliminate disturbances of the surrounding community.
- 2.2.15.12 Equip the tanks with, walkways, platforms, handrails and cages to allow safe access to the structures for operations staff. Locate standpipes and hoses on the walkways for maintenance.

2.2.16 Physicochemical Treatment System

2.2.16.1 Provide a sufficient size for the SBR decanted water to undergo complete treatment process of pH adjust, coagulation, flocculation, clarification to further improve the quality to comply with the more stringent discharge regulations.

2.2.16.1 Equip the tanks with, walkways, platforms, handrails and cages to allow safe access to the structures for operations staff. Locate standpipes and hoses on the walkways for maintenance.

2.2.16.2 Agitator drive should be direct coupled motor for compact construction

2.2.17 Effluent Disinfection System

2.2.17.1 Provide an effluent disinfection system to receive flow from the biological treatment system and disinfect the treated effluent to meet the required effluent discharge criteria.

2.2.17.2 Provide concrete disinfection contact tanks. Include sufficient detention volume and freeboard to prevent escape of insufficiently disinfected effluent, with a minimum detention time of one hour.

2.2.17.3 Provide a pipeline with a suitable outlet structure to convey the final treated effluent to the receiving water adjacent to the plant. Measure the flow of final effluent and display the instantaneous flow in L/s at the contact tanks.

2.2.17.4 Equip the tanks with, walkways, platforms, handrails and cages to allow safe access to the structures for operations staff. Locate standpipes and hoses on the walkways for maintenance.

2.2.17.5 Supply and install all equipment necessary for disinfection using Chlorine dioxide solution. Locate the chemical dosing system in a separate building. Include a bunded storage tank for bulk delivery of Chlorine Dioxide with a storage capacity at least equal to two weeks of chemical consumption at the full plant capacity. Provide a safety shower and eyewash on the outside wall of the building and erect warning and safety signs.

2.2.17.6 Provide sampling and test equipment with two years stock of consumables to allow daily testing of total and residual chlorine.

2.2.17.7 An alternative disinfection system based on the use of chlorine gas, sodium hypochlorite may be proposed.

2.2.18 Filtration System

2.2.18.1 For purposes of water re-use for plant irrigation, toilet flushing and vehicles washings, the quality of the re-use water shall comply the effluent requirement as defined in Table 3b Table 3b - Effluent Quality for Water Re-Use (USEPA 2004)

2.2.18.2 The filtration system shall consist of two stage filtration system consisting of sand filter and activated carbon filters.

2.3 SUPPORT SYSTEMS

2.3.1 Potable Water Supply System

2.3.1.1 Construct ground level bolted tanks with a roof and sufficient elevation to flood the suction of booster pumps. Use the tank for chlorine contact and ensure disinfection of supplies. Provide a tanker discharge point with permanently installed booster pump at the base of the potable water tank to receive supplementary deliveries of potable water should the need arise. Include overflow and scour pipelines directed to the plant stormwater system.

2.3.1.2 Include suitable arrangements for level control within the potable water tank using non-contact ultrasonic instruments. You may provide an external sight board for visual indication of level. Equip the tank with internal and external ladders, walkways, platforms, handrails and cages to allow safe access to the structures for operations staff.

2.3.1.3 Connect the pipe reticulation network to all areas of the plant. Include provisions for below-ground fire hydrants at suitable locations with appropriate signage, pavement markings and reflectors. Provide signs at outlets from the system in close proximity to outlets from the service water system.

2.3.2 Non-Potable Water Supply System

2.3.2.1 Provide ground level bolted tanks with a roof and sufficient elevation to flood the suction of booster pumps. Use the tank

for chlorine contact and ensure disinfection of supplies. Provide a tanker discharge point with permanently installed booster pump at the base complete service water system for process, washing and landscaping use around the plant. Equip the system to obtain chlorinated final effluent from the treated effluent holding tank and distribute service water around the plant in a dedicated reticulation network. Use materials suitable for the chlorinated effluent.

2.3.2.2 Install two high pressure pumps in a duty/standby/parallel configuration with an automatically backwashed filter and pressure storage tank. Use 220v three phase motors.

2.3.3 Multimedia filter

2.3.3.1 Provide a filter with screening to a maximum particle size of 50 micron, continuous operation without significant loss of head, automatic backwash with continuation of filtration duty and control by both head loss and time.

2.3.3.2 Direct backwash water to the filtrate pumping station. Interlock faults in the system to protect the sludge acceptance and dewatering units.

2.3.3.3 Provide a pressure storage tank to initiate and sustain flow in the system. Include sufficient capacity to allow immediate system response on operation of any outlet from the system without large pressure variations or water hammer and with a minimum capacity of 15 seconds storage at full flow for the system.

2.3.3.4 Distribute service water to all areas of the plant in a reticulation pipework system featuring adequate pipe sizes to sustain discharge pressures required by at least the septage acceptance and sludge dewatering units. Ensure signage complying with international codes to identify recycled water and select hydrants and all other types of fittings to prevent cross-connection of potable water fittings. Colour-code all items with the recognized colour for recycled water. Provide hoses, sprays and any other items needed to allow maintenance of the plant, equipment and landscaped areas.

2.3.4 Vent System

- 2.3.4.1 Provide a vent system to collect odorous gases from at least the septage acceptance units, holding tanks, dewatering units and filtrate pumping station together with any other location needed to prevent odor nuisance.
- 2.3.4.2 Withdraw gases using a jet mechanism to isolate blower from corrosive gas. Install at least two centrifugal exhaust fans arranged on a duty/standby basis. Install sufficient capacity for at least twice the duty volume system requirement at the design resistance pressure with a minimum of 100 CFM at 35 degrees C. Provide two alternative automatic control arrangements featuring interlocks with the operation of either the septage acceptance units and the dewatering units or settings from a 24 hour/7 day clock.
- 2.3.4.3 Provide a suction manifold system in suitable pipeline materials leading to the fans. Equip each inlet to the suction system with a throttling and isolation valve in a convenient location at ground level. Ensure the manifold system allows generation of sufficient backpressures for adequate suction from each inlet. Grade pipelines to scours and direct scour outlets to the filtrate pumping station.
- 2.3.4.4 Deliver exhaust on top of the building and away from any intakes for air conditioning or ventilation systems.

2.3.5 Electrical and Control System

- 2.3.5.1 Provide a complete electrical and control system description and design.

2.4 FACILITIES

2.4.1 Control Room and Instrumentation Room

- 2.4.1.1 Provide a control room for centralized operations management of the septage treatment plant. Locate the control room to overlook the major areas of the overall septage treatment plant.

- 2.4.1.2 Include sufficient workstation space for at least three staff, storage space for all plant data, drawings, manuals and records, at least two personal desktop computers allocated to the plant control system and servers for the plant control system. Include a computer network linked to the administration building network covering an additional office workstation complete with desktop personal computer, an A3 laser printer, uninterruptible power supply and full suite of office software. Provide all other necessary furniture, fittings and equipment.
- 2.4.1.3 Include adequate staff amenities, air conditioning, power, lighting, communications, fire extinguishers, water supply and sewerage services for the building with suitable connection to emergency power generation to ensure safety.

2.4.2 Building Finishes

- 2.4.2.1 The building shall be constructed with architectural and exterior finishes as shown in Table 9 and Table 10 respectively. The Schedule of doors is shown in Table 11.

Table 9: Architectural Finishes.			
ROOM DESIGNATION	INTERIOR FINISHES		
	Floor	Wall	Ceiling
Dewatering Room	Colored Floor Epoxy Hardened	Plain cement Plaster painted finish	Painted finish No ceiling, provide roof insulation
Screening and	Colored Floor Epoxy	Plain cement plaster	Painted finish

Degritting Room	Hardened	painted finish	No ceiling, provide room insulation
Pump/Blower Room	Colored Hardened	Plain cement plaster painted finish	Painted finish No ceiling, provide roof insulation
Sludge storage room	Colored Hardened	Plain cement Plaster painted finish	No ceiling, provide roof insulation

Table 10: Exterior Finishes.	
Description	Exterior Finishes
CHB Wall	Plain cement plaster painted finish with groove
Conc. Columns and Beams (Exposed)	Plain cement plaster painted finish with groove
Conc. Columns and Beams (Unexposed)	Plain cement plaster with groove
PVC Door	Enamel paint
Steel Doors	Painted with epoxy primer base
Ceiling (Interior)	Painted finish (FICEM BD.)
Ceiling (Exterior)	Painted Finish (Marine Bd)
<i>NOTE: Paint truss members for room with no ceiling.</i>	

Table 11: Schedule of doors and windows.

Room Designation	Doors	Windows
Pump/Blower Room	Louvered Steel Door	Steel Louvers
Sludge Storage Room	Louvered Steel Door	Steel casement

3.0 OPERATION AND MAINTENANCE

3.1 GENERAL

- 3.1.1 Operate and maintain the STP and associated works for a continuous period of 1 month following completion of all commissioning. Operate the plant in accordance with environmental requirements and relevant approved Operations and Maintenance Manuals. Carry out all scheduled, routine, preventative and breakdown maintenance. Maintain all assets to retain their functionality in “as new” condition.
- 3.1.2 Supply all labour to undertake operation and maintenance, with the exception of six operators who will be made available by the Employer to work under the direction of the Contractor. The Employer will pay all normal wages for these operators. The Contractor shall pay all overtime wages for any overtime worked under the direction of the Contractor.
- 3.1.3 The Employer may place additional staff on site and will meet costs associated with such additional staff.
- 3.1.4 Supply all materials, spare parts, chemicals, water, generator fuel and consumables required to operate and maintain the plant.
- 3.1.5 The Employer will pay for power consumed. Power and chemical consumption will be measured during the Process Proving Period and verified against performance guarantees. If consumption exceeds guarantees, the extra costs will be estimated using NPV analysis and will become a debt due by the Contractor to the Employer.
- 3.1.6 Dispose of all waste materials from the site in an environmentally acceptable manner.
- 3.1.7 Maintain and deliver to the Employer at least all records specified in the Operation and Maintenance Manuals.
- 3.1.8 Undertake the following duties as minimum requirements:
- The effective and efficient operation and maintenance of the Septage Treatment works to ensure the plant meets all requirements.
 - Maintain and clean plant amenities, buildings, grounds and surrounds to required standards.
 - Effective control and direction of labour at the works.
 - Maintain an accurate record of information with regard to plant operations; process monitoring, maintenance and repairs.

- Monitor and report the status or condition of each individual unit through inspection and review of operations performance and ensure that units are maintained in the best possible condition relative to safety and performance.
- Ensure that all precautions are taken for the security of the Employer's staff and property at the treatment works.
- Ensure compliance with environmental regulatory requirements.
- Train personnel in operational requirements and safety aspects of the plant.
- Undertake sample collection and on-site chemical testing relevant to plant.
- Initiate work orders for the repair and maintenance of plant, equipment and systems by service personnel.
- Organise and manage sub-contractors and suppliers to undertake minor works, repairs or services at plant.
- Ensure that personnel under his/her control are supervised and work in accordance with current Employer policies and practices.
- Ensure that all work is carried out in a safe manner in accordance with an approved safety plan for the site.

3.2 SPECIFIC FUNCTIONS

- 3.2.1 Operate all septage treatment unit main process systems, support systems and facilities to perform the work under the contract. Sample, analyse and report on process streams to demonstrate performance.
- 3.2.2 Conduct day-to-day and on-going cleaning and maintenance of equipment, structures, amenities and grounds. Maintain all electrical, mechanical, telemetry and control equipment at the septage treatment plant.
- 3.2.3 The work under the Contract includes but is not limited to the following functions:
 - Treatment of septage to comply with effluent discharge conditions
 - Odor control and management
 - Optimisation of efficiency and effectiveness of the operation of the STP
 - Management and maintenance of the treatment plant assets
 - Sampling and analysis
 - Management and control of chemicals and services
 - Management and control of energy

- Transport and disposal of screenings, grit, bio solids, oil and grease and all other waste products and garbage to approved locations off-site
- Maintenance of operations and analysis records
- Provision of feedback on field observations
- Submission of reports
- Submission of Monthly Reports and attendance at monthly meetings with the Employer
- Preparation and submission of a Management and Safety Plan
- Implementation and operation of a quality management system.

3.3 GENERAL OBJECTIVES

3.3.1 All work under the Contract is to be performed with the objective of providing continuous treatment of septage and discharge of treated effluent to fully meet the effluent discharge requirements while minimising costs and the production of waste products.

3.4 DATA RECORDS

3.4.1 Provide a monthly record on CD and in hardcopy of the following in the form of an electronic data base using the latest version of MS Excel:

- All data required under this Section.
- All data showing quantities and costs of chemicals and similar inputs used to perform work under the contract.
- All data showing quantities and costs of energy used to perform work under the contract.

4.0 TREATMENT OF SEPTAGE

4.1 GENERAL

4.1.1 Treat raw septage at the treatment works to not less than the minimum standards required by the effluent discharge standards and at the flows as specified. (*See Pages 79-80*)

4.2 OPERATION OF SPTP

4.2.1 Operate the treatment facilities using trained and qualified operators. Undertake everyday operation of the treatment facilities including, but not limited to:

- Operating treatment units and equipment
- Monitoring of operation of equipment
- Monitoring of treatment processes and performance
- Monitoring of final effluent quality
- Monitoring and taking actions in response to alarms
- Maintaining and cleaning of equipment, treatment units, buildings and amenities
- Transport and disposal of screenings, grit, biosolids, oil and grease and all other waste materials and garbage
- Dewatering and treatment of biosolids to produce Grade A material
- Undertaking actions to rectify any problems associated with the operation of the septage treatment facilities
- Maintaining the store of bulk chemicals
- Co-ordinating maintenance of grounds and lawns
- Co-ordinating planned maintenance activities.

5.0 BIOSOLIDS MANAGEMENT

5.1 GENERAL

- 5.1.1 Manage the dewatering, processing and loading of biosolids into trucks, transportation off-site and reuse/disposal of biosolids.

5.2 DATA RECORDS

- 5.2.1 Maintain a record of all septage deliveries, biosolids analysis, stabilisation grades and quantities. Store the records in a database and submit with the monthly report.

6.0 ODOR CONTROL AND MANAGEMENT

6.1 GENERAL

- 6.1.1 Operate the wastewater treatment works and odor control facilities, to prevent odor nuisance. Investigate, take remedial action and report to the Employer on any odor complaints received.

6.2 ODOR COMPLAINTS

- 6.2.1 Odor complaints received by the Employer shall be referred to the Contractor for immediate investigation. If necessary, visit the complainant to obtain particulars to identify the odor source. Take

action to eliminate the source of odors and provide feedback to the complainant.

- 6.2.2 In dealing with complaints, the Contractor shall ensure that a high standard of community relations is maintained and that courtesy is shown to members of the community at all times.

II. MATERIALS SPECIFICATION

The material, design, fabrication, and erection of the 15 CMD septage treatment plant shall conform to the manufacturer’s specification which are derived from engineering principles, industry experiences, and the aforementioned standards specification.

All materials shall be new, previously unused, and in first class condition. Steel materials of unidentified analysis may be used provided they are tested and properly certified by a qualified testing laboratory.

Bidders must state here either “Comply” or “Not Comply” against each of the specifications stating the corresponding performance parameter of the equipment offered. Statements of “Comply” or “Not Comply” must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer’s un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate.

A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidders statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the provisions of ITB Clause 3.1(a)(ii) and/or GCC Clause 2(a)(11).

Item	Specification	Statement of Compliance
A.	SEPTAGE TREATMENT PLANT (SPTP) PRIMARY REQUIREMENTS	
1	Macerator	
a.	Min. Flow: 40 cubic meters per hour	

b.	Cutting elements: carbide blades	
c.	Shaft seal: single-acting, NBR O-rings	
d.	Inlet/Outlet Port: Flange DN 150 PN 16	
2	Rock Trap System	
a.	30 liter capacity slim type	
b.	Removable basket	
c.	Quick opening cover via 4 wing out	
d.	4" diameter leading pipe with camlock front connect and flange rear connect	
e.	2" diameter tank drain port	
f.	Material: All components SS 304	
3	Package Treatment Unit	
	Capacity: 15 LPS	
	Inlet: 3" Camlock	
	Outlet: 6" Flange connection (DN 150)	
a.	Trash Removal:	
	Spiral type: shaftless	
	Spiral screen zone diameter: 168 mm	
	Spiral screen cleaning: brushes mounted spiral	
	Screen mesh: 6mm	
	Meshes type: Perforated	

	Liner: Stainless steel plates	
b.	Grit Extraction	
	Extraction Screw Type: Shaftless	
	Extraction Screw Diameter: 145mm	
4	Hyperbolic Mixer	
a.	Gear Drive: 1.1Kw, 220V, 60Hz, 3P	
b.	Impeller speed: 62 RPM	
c.	Output Torque: 155 Nm	
d.	Shaft: epoxy coated 89 mm diameter block iron (C1010)	
e.	Main Impeller: 500mm diameter glass fiber reinforced plastic (GRP)	
f.	Support Paddles: 12" x 3" SS 316 Stainless Steel	
5	Sludge Submersible Pump	
a.	Max Flow: 300L/min	
b.	Max Head: 10 meters	
c.	Casing: Casted steel alloy	
d.	Rotor: Stainless Steel 304 with Hard Chrome Plating	
e.	Seal: Mechanical, carbon-ceramic	
f.	Inlet/Outlet Port: Flange DN 100 PN16	
h.	Motor Drive: Inverter motor 1.5 kw, 220 V, 60Hz	

6	Chemical Tank with Mixer (for flocculant, lime, pH adjuster)	
a.	Drive motor: 0.47 Kw 4 pole 3 phase 220V 60 Hz, 1750 RPM IP55, Hollow shaft 90 deg. Configuration, 300 RPM output, reduction ratio: 7	
b.	Paddle: SS 304 shafting with 2 blades at 30 degrees pitch	
c.	SS 304 700liter Tank with two(2) 1" NPT ports. 1 for drain; 1 for outlet	
7	Polymer Dosing Pump	
a.	Capacity: 7.44 LPM	
b.	Max Pressure: 0.3 Mpa	
c.	Drive Unit: Motor Driven	
d.	Motor rating: 0.15 Kw 4 pole 3 phase 220V 60 Hz	
e.	Inlet/Outlet: 1" diameter flanged	
8	Static Mixer	
a.	Max Flow: 10 m ³ /hr	
b.	Material: PVC Pipe 2"dia	
c.	Baffles: PVC Plates	
d.	Retention: 8-10 seconds @rated capacity	
e.	Inlet/Outlet Port: 2" diameter NPT	
9	Sludge Dewatering Unit	
a.	Equipment/Model: Screw Press Dewatering Unit	

b.	Sludge Inlet Pipe: 2" diameter	
c.	Overflow Pipe: 2" diameter	
d.	Screw Conveyor: Conical shaft	
e.	Drum length: 3000 mm	
f.	Screen type: Wire wedge	
g.	Wire wedge mesh: 300 to 400 microns	
h.	Dryness control: counterweight to press the sludge before outlet	
j.	Inlet flow: 2 mc/h 4% solids/4 mc/h 1% solids	
k.	Dewatered sludge dryness: 15-20%	
l.	Internal cleaning system: Brushes to clean the internal surface of the drum	
m.	External washing system: Travelling ring mounted spray nozzles	
n.	Water consumption: 1.7 LPS	
o.	Water pressure: 5.0 Bars	
p.	External wash frequency: 20 seconds forward; 20 seconds reverse	
q.	Inclination mounting: 10 degrees	
r.	Screw Drive: VFD ready Gear Motor	
s.	Frame, bolts, drums, and all other components excluding screw and gear motor: SS AISI 304	
t.	Screw Conveyor: micro alloy steel	

u.	Effluent to treat: municipal sludge	
v.	Liquid outlet: Diameter 60 mm	
w.	Inspection covers: Bolted	
x.	Power installed: 0.55 Kw, 400V, 60 Hz	
B.	SPTP SECONDARY EQUIPMENT	
1	Equalization Tank/Transfer Pump	
a.	Type: non-clog	
b.	Service: submersible	
c.	Capacity: 300L/min	
d.	Port: 2" NPT	
e.	Motor: 1.5 kw 220V 3 phase	
2	Submersible aerator: air vol 22 cubic meter/hr, 1.5 Kw, 220 V, 60 Hz, 3 phase	
3	Decanter pump	
a.	Type: non-clog	
b.	Service: submersible	
c.	Capacity: 350L/min	
d.	Port: 2" NPT	
e.	Motor:0.7 kw 220V 3 phase	
4	WAS Transfer Pump	
a.	Submersible pump: PVC Casing with	

	SS304 air line	
b.	Service: submersible	
c.	Capacity: 200L/min	
d.	Port: 2" NPT	
e.	Motor: 0.7 kw 220 V 3-phase	
C.	SPTP TERTIARY TREATMENT EQUIPMENT	
1	Disinfection Dosing System	
a.	Capacity: 50-150 grams/hr	
b.	Operation: On-line oxidant level (ORP) monitoring	
c.	Efficiency: 80-90%	
d.	Operation: Automatic dosing based on actual ORP level	
e.	Generation: 2 precursor system (component A and B)	
f.	Power supply: 220 V 60 Hz	
2	Flow meter: standard water meter 4" pipe diameter	
3	Filtration system: sand filter and activated carbon filters	
4	Treatment Tank	
a	5cmh capacity chemical treatment tank for pH adjustment, coagulation, flocculation and clarification	
b	Polycarbonate corrugated sheet settlers	

c	Epoxy coated 4mm MS Plate with angle bars supports	
5	pH Adjustment Tank agitator	
	0.47 Kw 4 pole 3 phase 220V 60 Hz, 1750 RPM IP55 100rpm Hallow shaft Gearmotor; SS shaft and agitator blades	
6	pH Adjuster Dosing Pump	
	7.8L/hr, 0.31/mL/shot, 0.2Mpa pump meter	
7	Coagulation Tank agitator	
	100rpm Hallow shaft Gearmotor; SS shaft and agitator blades	
8	pH Adjuster Dosing Pump	
	7.8L/hr, 0.31/mL/shot, 0.2Mpa pump meter	
9	Flocculation Tank with Agitator	
	0.47 Kw 4 pole 3 phase 220V 60 Hz, 1750 RPM IP55 60rpm Hallow shaft Gearmotor; SS shaft and agitator blades	
10	Flocculant Dosing Pump	
	7.8L/hr, 0.31/mL/shot, 0.2Mpa pump meter	
6	Chemical Tank with Mixer	
a.	Drive motor: 0.47 Kw 4 pole 3 phase 220V 60 Hz, 1750 RPM IP55, Hallow shaft 90 deg. Configuration, 60 RPM output, reduction ratio: 7	
b.	Paddle: SS 304 shafting with 2 blades at 30 degrees pitch	

c.	SS 304 350liter Tank with two(2) 1” NPT ports. 1 for drain; 1 for outlet	
11	Decant Water Pump	
	200L/min, 8M flow rate, 0.75kW, 220V 60Hz	
12	Filter Feed Pump	
	350L/min, 11M flow rate, 2.2kW, 220V 60Hz	
D.	SPTP SUPPORT SYSTEM	
1	Water tanks: 5 cubic meter	
2	Booster pumps: 5 cubic meter/hr; with 82 gal SS pressure regulating tank	
E.	CIVIL WORKS	
1.	SBR, Holding Tank, Chemical Tanks	
2	Piping (mechanical works) process, recycle, potable water lines	
a.	Inlet connections – camlock type Aluminium construction. Coupled to SS304 pipe via threaded connection with end flange connections.	
b.	Pipelines – for raw septage and screened septage, all are conveyed through PVC Gray Pipe Sch. 80. Joints are cement-bonded and connections for 8” diameter and 4” diameter pipe to isolation valves and to related equipment area flange connected. Smaller 2” diameter pipes for sludge dewatering unit in-feed, over flow and tank transfer lines are PVC Gray Pipe Schedule 80. Treated water lines for recycling and to be used for washings at the process equipment will be 1” diameter PVC Gray	

	Schedule 80. Potable water and recycled water lines for washing are on ¾" diameter PVC Blue Schedule 40.	
c.	Compressed air pipeline – is multi-materials. Header line going to distribution line is mild steel. Downpipe from distribution line going to the air diffuser loop is stainless steel 304. The diffuser loop is 4" diameter PVC Gray Pipe Schedule 80. Air diffuser is High Density Polyethylene constructed with EPDM membrane.	
d.	Isolation valves – for the raw septage section is a full bore ball valve type secured in place via flanged connections. This eliminates clogging. Valves for the screened septage section is of butterfly type also in flanged connection. Smaller 2" diameter pipe utilizes true-union ball valves to allow disassembly during maintenance.	
e.	Brackets, hangers, and supports – fully submerged and wetted areas will be stainless steel 316 anchored using stainless steel 316 anchor bolts. Not wetted area will be epoxy coated mild steel materials.	
f.	Chutes for screenings, grit, and sludge cake are constructed from stainless steel 304 fabricated in accordance with correct positioning. Final surface finish is hairline like.	
g.	Hydro test for pressure lines and leak test for non-pressurized lines.	
h.	Vibration test during dry run and add additional support/brackets when necessary.	
3	Electrical (w/ Automation at SBR)	
	*Control panels (primary, secondary, remote, MCB, lightings, CO)	

a.	Fabrication, supply and installation of main control panel. The control panel cabinet material is powder coated steel for durability. The cabinet is accessible via two-weather tight door split opening. Control knobs and light indicators on one door and monitoring/ controller displays are mounted on the other. Wirings are color-coded, two (2) colors for single phase control power and three (3) colors for three phase load lines.	
b.	Fabrication, supply, and installation of remote control panel. The control panel cabinet material is stainless steel 304 with weather tight single door.	
c.	Fabrication of lay-outing and mounting stainless steel cable tray. Connections of rigid conduit from cable tray to each motor location. Connection of flexible conduit from the end of rigid conduit connected via cable glands for the submersible pump connections.	
d.	Lay-outing and wiring from MCP to remote control.	
e.	Lay-outing and wiring from MCP to each motor.	
f.	Lay-outing and wiring liquid level controls, limit switch, pressure switch, reversing switch, sensor, etc.	
g.	Lay-outing and wiring from lighting and C.O.	
h.	Terminating and commissioning of all loads.	
i.	Insulation testing of each wiring.	
j.	Testing and dry running of each motor loads.	

4	Civil engineering designs: provide designs for the construction of the administrative building, control room, power/genset room, chemical storage and chlorine dioxide dosing rooms	
F.	OTHERS	
1	Temporary Facilities (Office, electrical, water, etc.)	
2	Operations Manual/Training	
3	Process proving and commissioning: 1 month commissioning and 1 month process proving	
4	Site Development	
5	Generator: 90 KVA capacity	

III. VACUUM TRUCK SPECIFICATION

Item	Specification	Statement of Compliance
1	VACUUM TRUCK	
	a. Minimum effective capacity of 3,500 liters (3.5 cubic meters)	
	b. Body and rear door shall be constructed of at least 6mm thick steel plate.	
	c. Provided with suction and discharge ports both with stainless ball valves and quick hose connector	
	d. Minimum 2coats of Epoxy paint as rustproofing inside following near-white-metal surface preparation. Or any corrosion-resistant metal in place of carbon steel for the tank. Steel as tank material would be an option.	
	e. All pipes, fittings and valves shall be made of steel including internal suction pipe	
2	VACUUM PUMP	
	a. Driven by truck power take-off (PTO)	
	b. Provided with 4-way valve operated for suction/discharge change over.	
	c. Natural, Fan cooling. No water lines to truck cooling system.	
	d. Incorporated lubricating pump	
	e. Incorporated check valve	
	f. Standard with Final Filter	

	g. One-year warranty for parts and services	
	h. Free air capacity: 414 cfm	
	i. Air capacity at 15" Hg/50% vacuum: 270 cfm	
	j. Maximum vacuum: 28" Hg; Continuous Vacuum: 24" Hg	
	k. Maximum pressure: 29 psig	
	l. Power required at 15" of vacuum: 11 hp	
	m. Power required at maximum pressure: 35 hp	
	n. Rotation speed: 1100 rpm	
	o. Oil tank capacity: 1.2 US gal	
	p. Oil consumption: 0.063 US gal/h	
	q. Sound Pressure at 7m/60% Vacuum: 78 dB	
3	TRUCK SPECIFICATION	
	a. Diesel powered, Euro 4 Compliant, Engine: Cummins ISF3.8. PTO Included	
	b. Minimum of 4 cylinders, four cycles, turbocharged and intercooled Direct Injection, with adequate horsepower for the gross vehicle weight rating	
	c. 2 axles – 6 wheeler capable of suggested gross vehicular weight (GVW). Front axle load (2.2T) and rear axle load (6.5T)	
	e. Size of unit is approximately to be (6.00m x 2.0m x 2.3 m), length, width and height respectively.	

	h. Power steering, Air conditioned, air over hydraulic brake system	
	m. Six tires	
	o. Safety belts	
	p. Side mirrors (Left and Right) with blind spot mirror (Right)	
4	HOSE AND HOSE CONTAINER	
	a. Heavy duty Spiral Hose: 3 inches diameter ; 550 feet length at 100 feet segment with Camlocks couplings at both end (male & female)	
	b. Two checkered steel hose bed shall be provided on both side of tank, extending at full length capable to hold the quick coupling extension hoses with steel railings both sides, angular bar support, bolt and nuts for hose bed shall be of steel	
	c. 4pcs securing rope for securing Spiral Hose at hose bed	
5	CLEAN WATER TANK	
	a. 200-liter capacity clean water tank made of steel shall be provided	

Note: All the provided material specifications here are at the minimum. Modifications such as changes in specs or addition of equipment must be stated and justified in the bid documents.

Section VII. Drawings

PROJECT TITLE:

Construction, Supply, Installation, Commissioning and Process Proving of 15 CMD Septage Treatment Plant and Supply and Delivery of 2 units 3.5 cu.m. Capacity Septage Vacuum Trucks.

Please refer to:

- I. Plans and Drawings
- II. LWUA Standard Specifications for Water Supply Construction Bidding Document (Volume 2) – AS REFERENCE.

PROPOSED 15 CMD, SEPTAGE TREATMENT PLANT
GENERAL MARIANO ALVAREZ WATER DISTRICT

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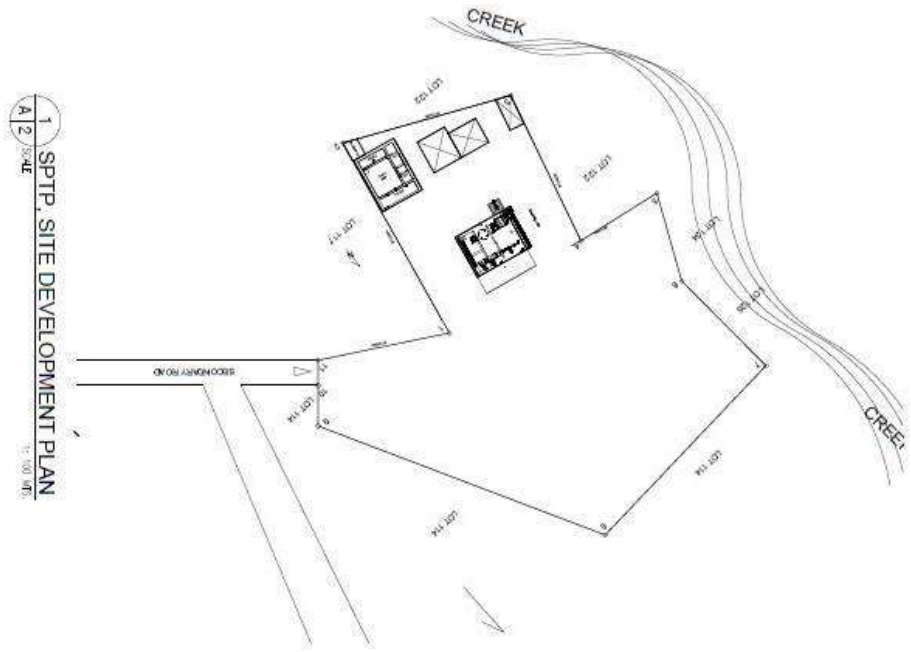
VIEW 1



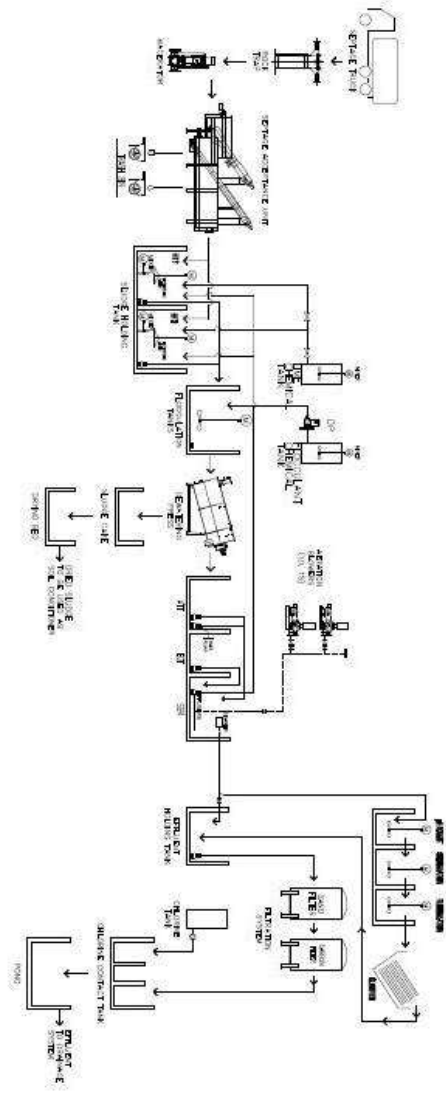
VIEW 2



PERSPECTIVE (GMA, 15 Cubic Meter SEPTAGE TREATMENT PLANT)

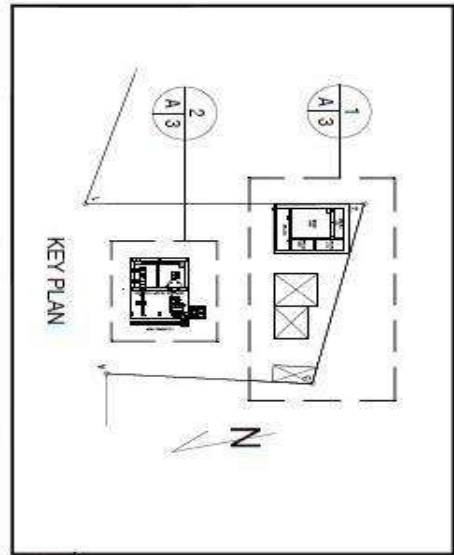
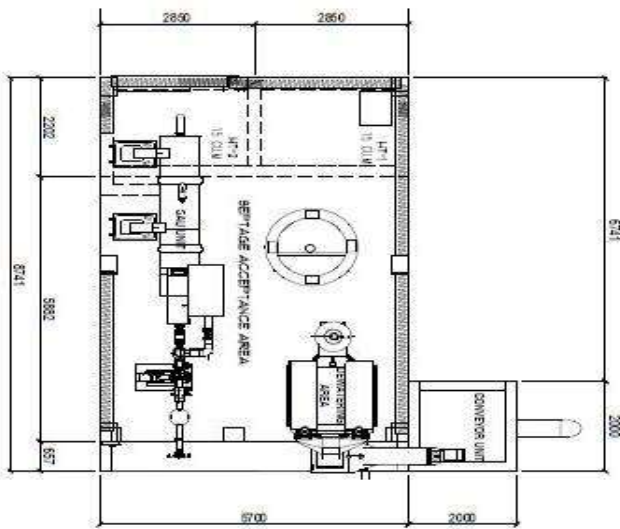


1 SPTP SITE DEVELOPMENT PLAN
A 2 SCALE
1" = 50' N.T.S.

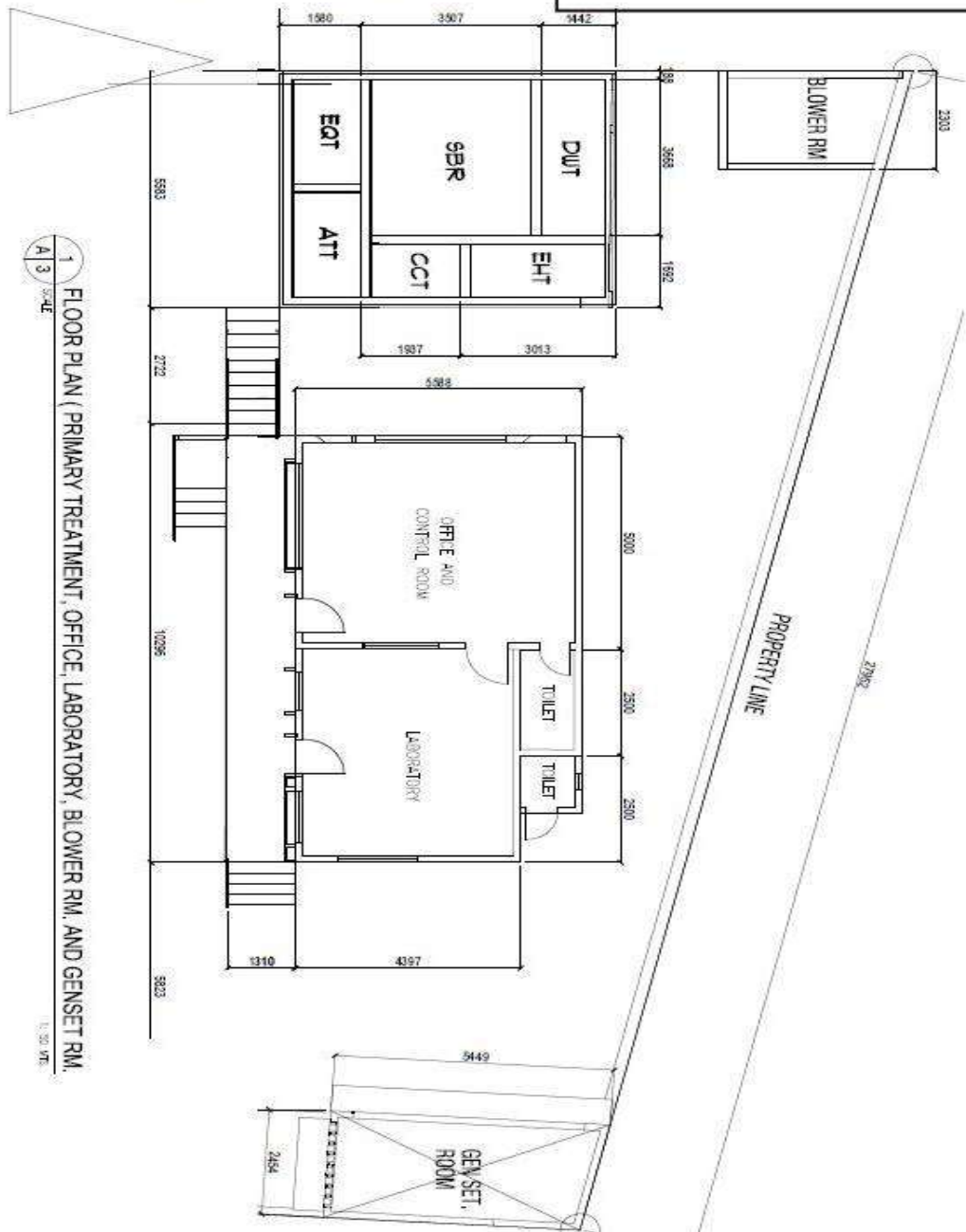


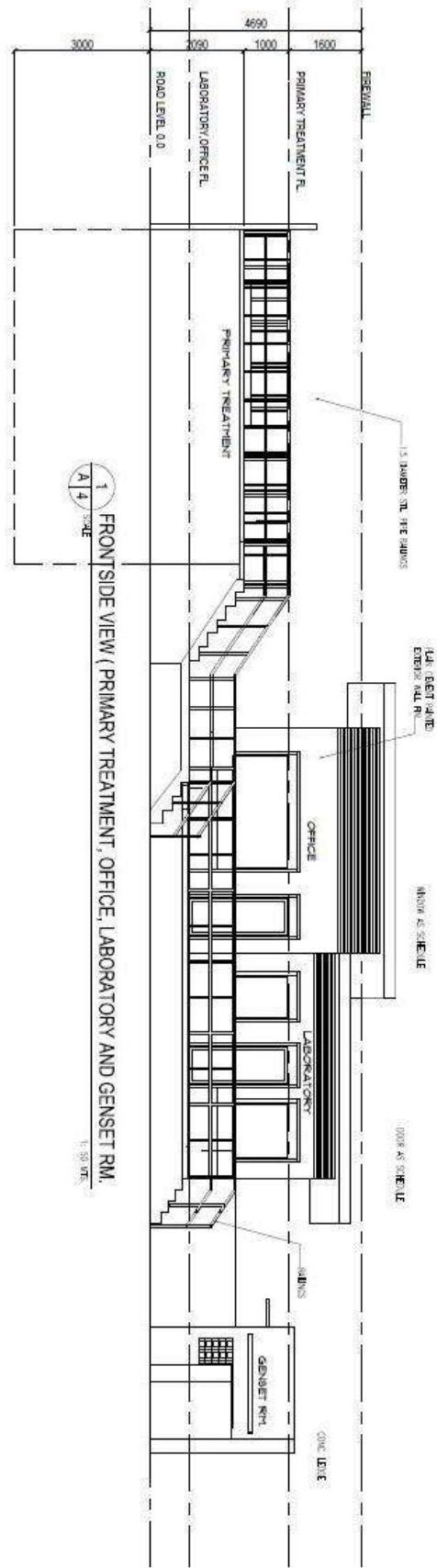
2 PROCESS FLOW DIAGRAM
A 2 SCALE

2 FLOOR PLAN (SEPTAGE ACCEPTANCE & UNLOADING AREA)
 1:30 N/E
 A/3

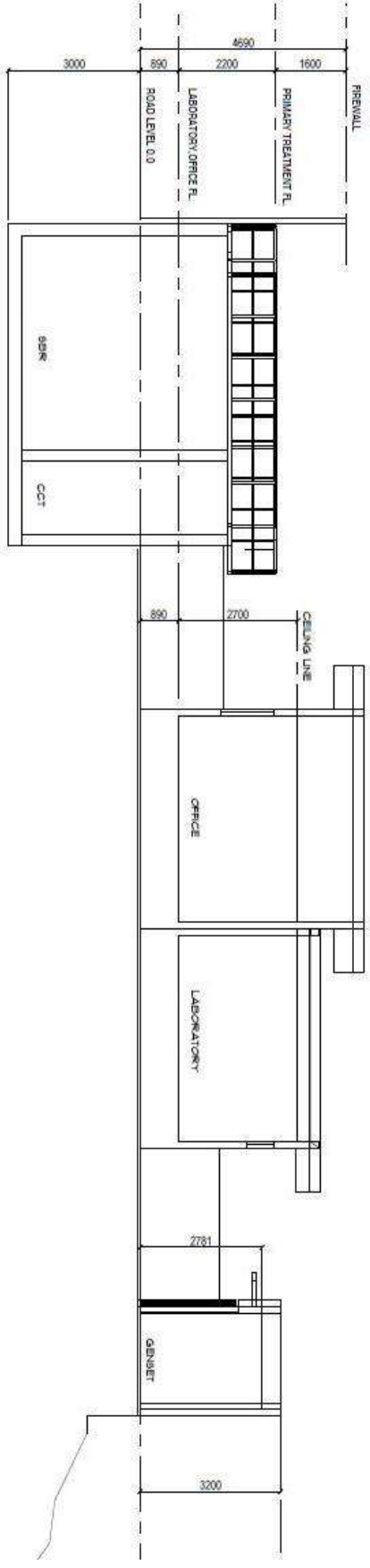


1 FLOOR PLAN / PRIMARY TREATMENT, OFFICE, LABORATORY, BLOWER RM. AND GENSET RM.
 1:30 N/E
 A/3

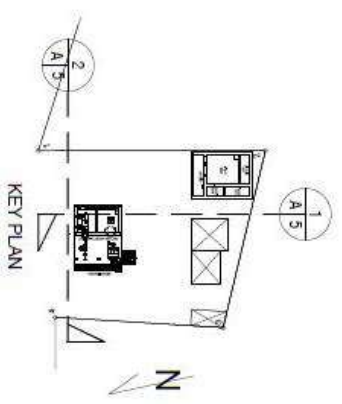
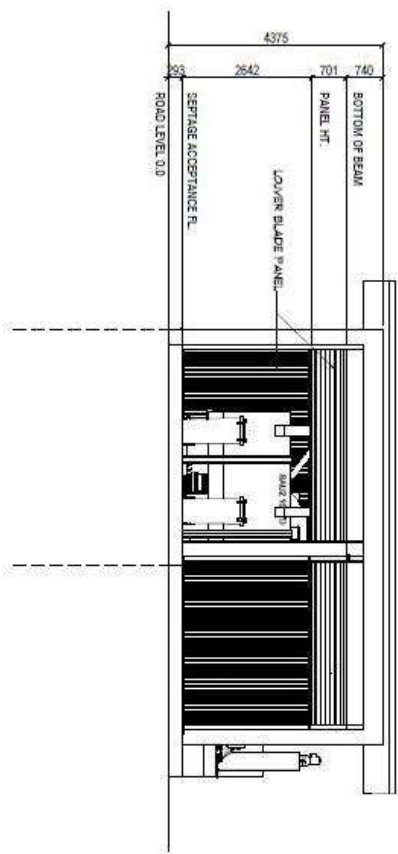
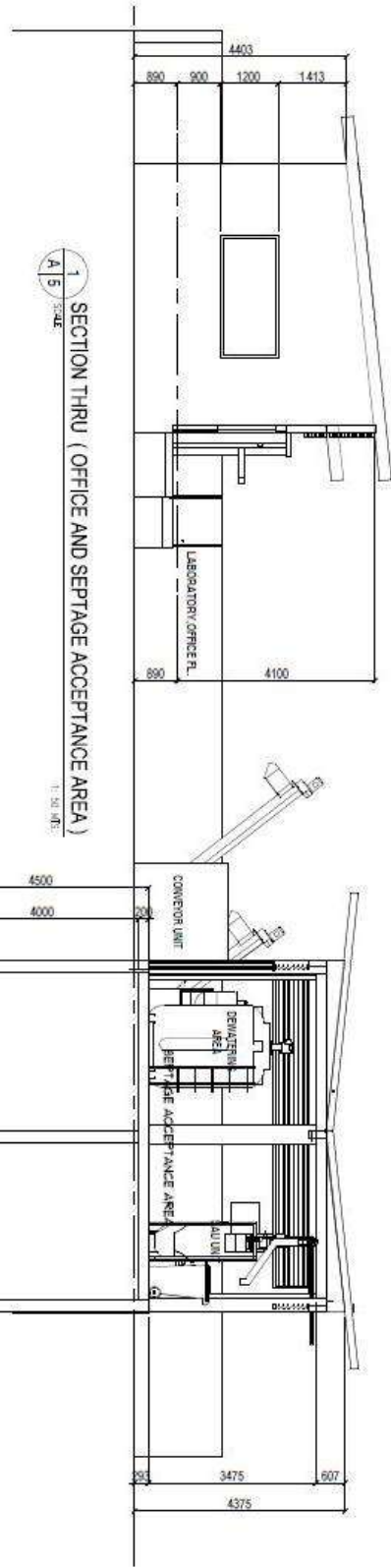


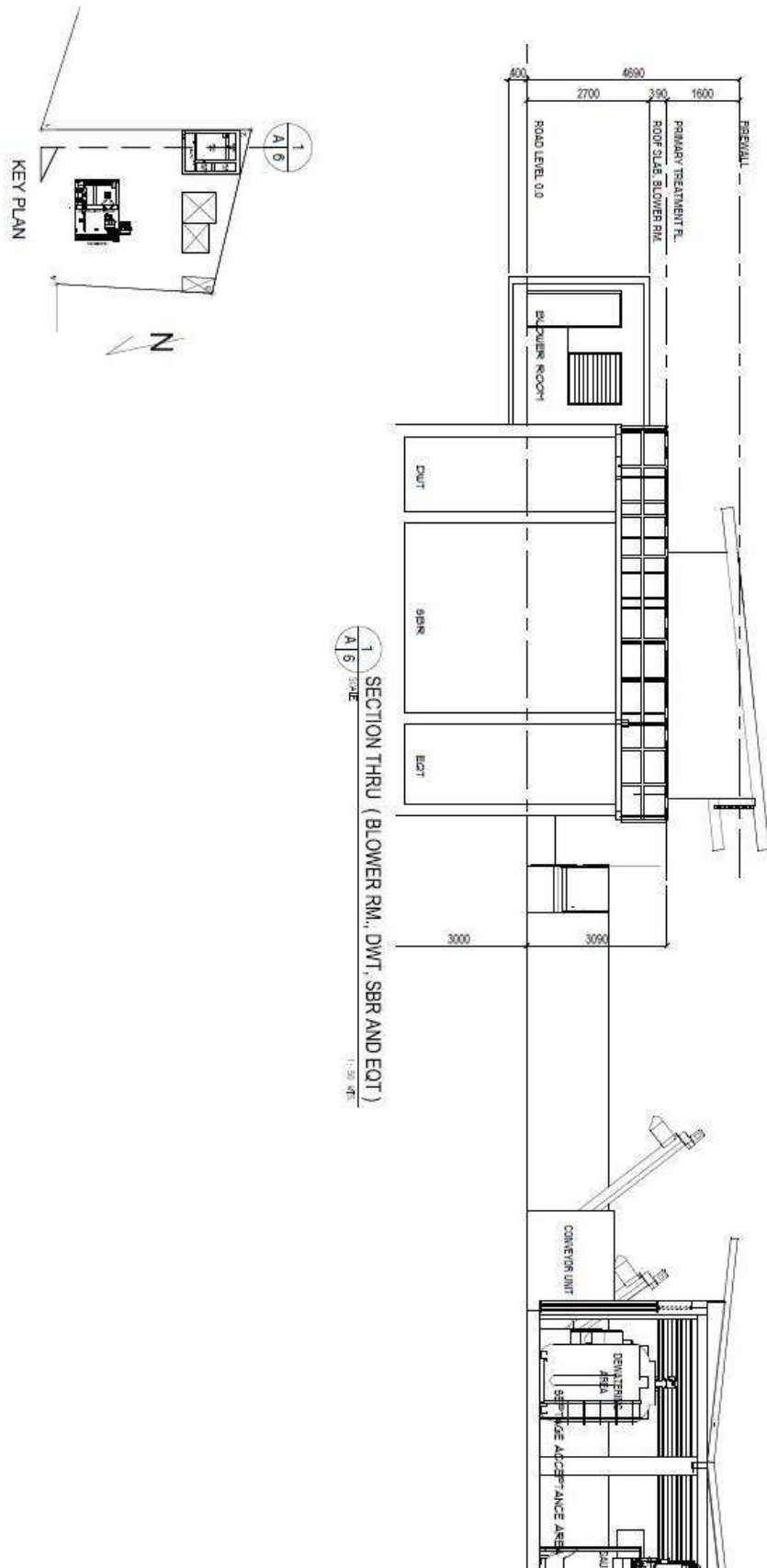


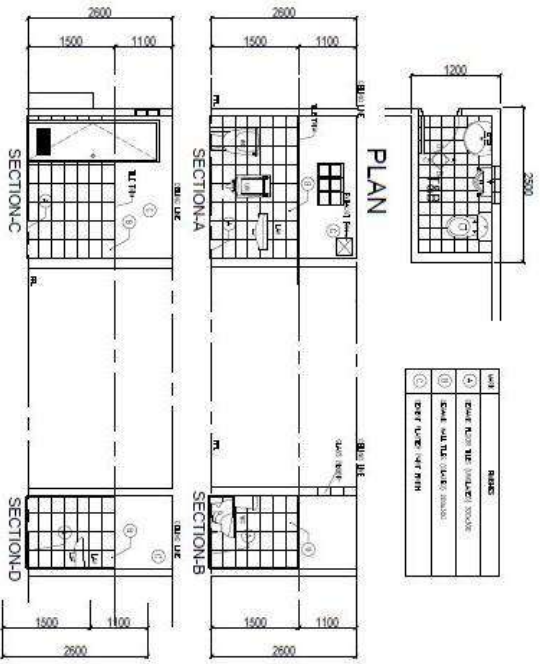
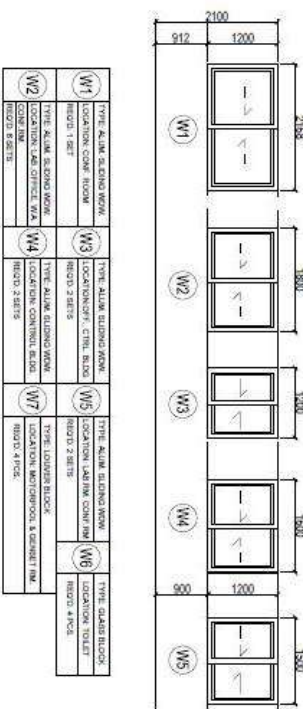
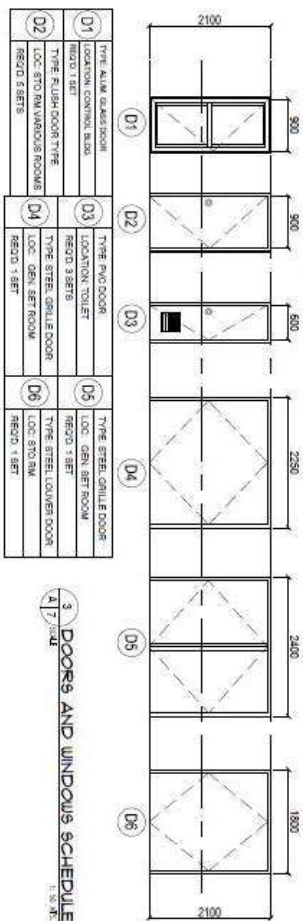
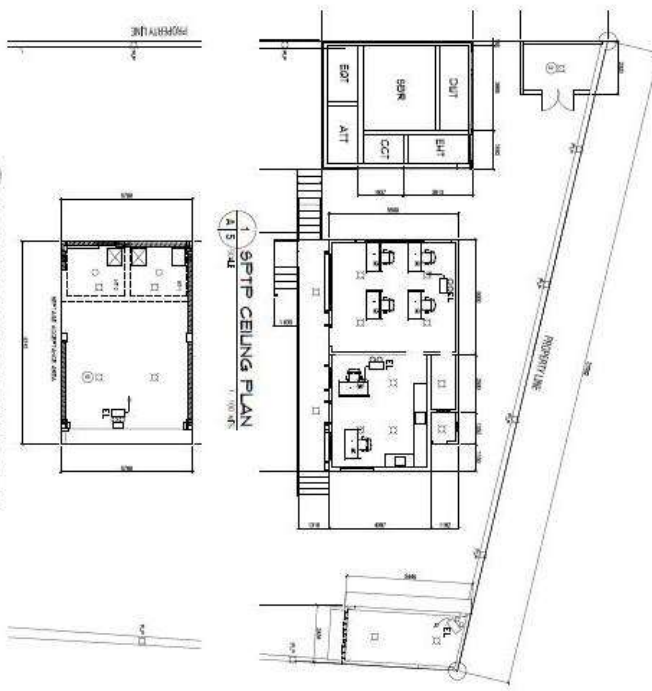
1 FRONT SIDE VIEW (PRIMARY TREATMENT, OFFICE, LABORATORY AND GENSET RM.)
 SCALE: 1/80 FT.



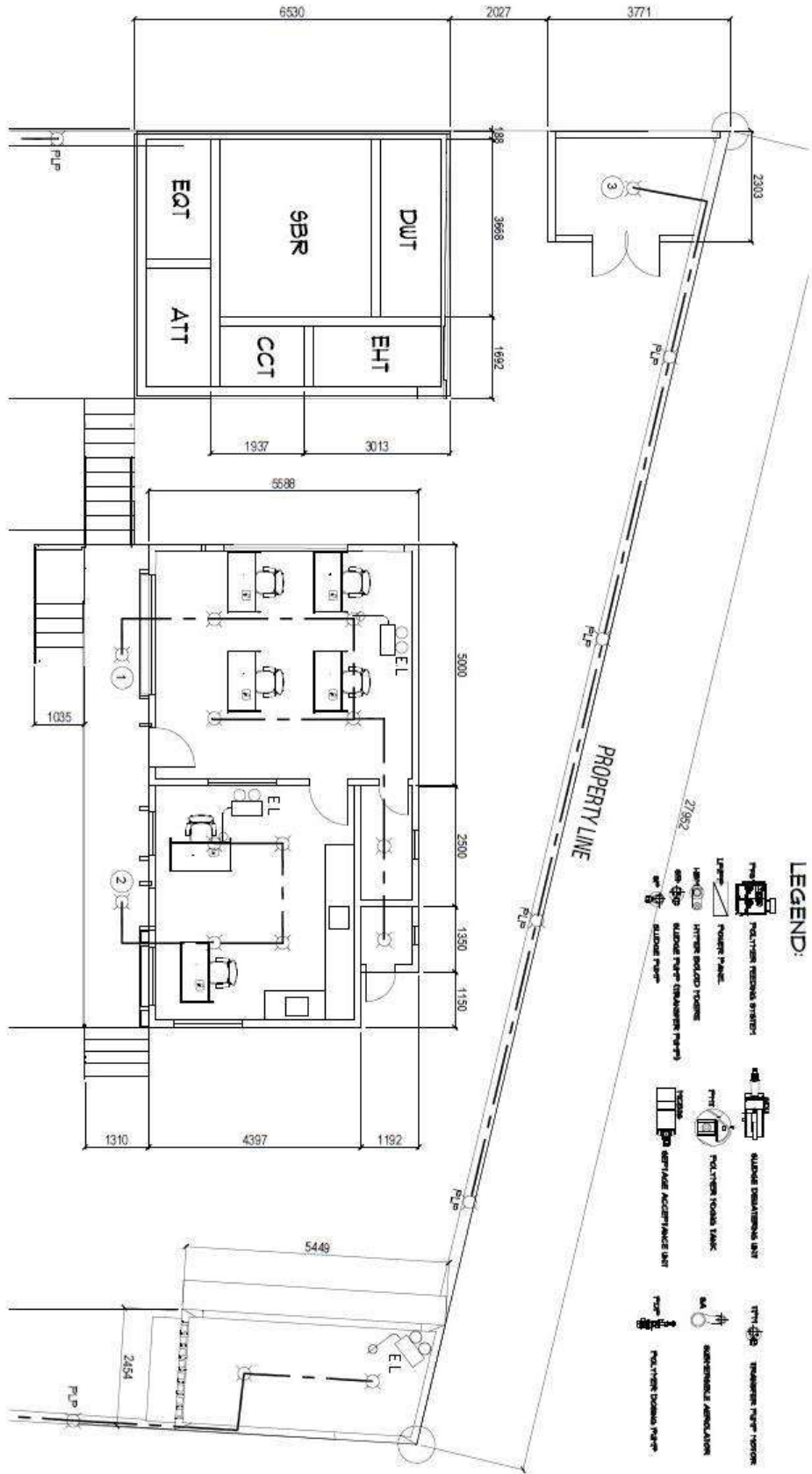
2 SECTION THRU (SBR, CCT, OFFICE, LABORATORY AND GENSET RM.)
 SCALE: 1/80 FT.



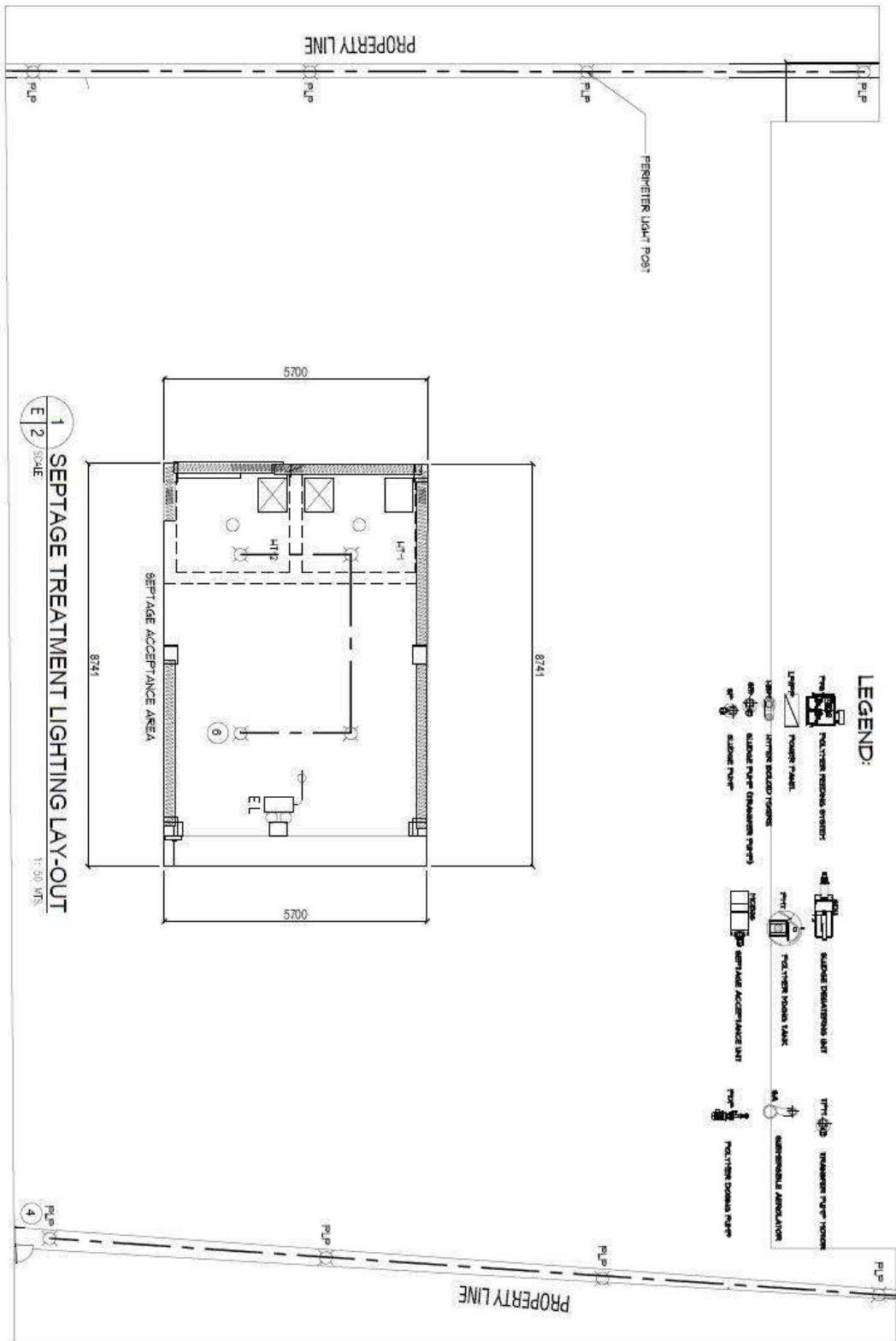


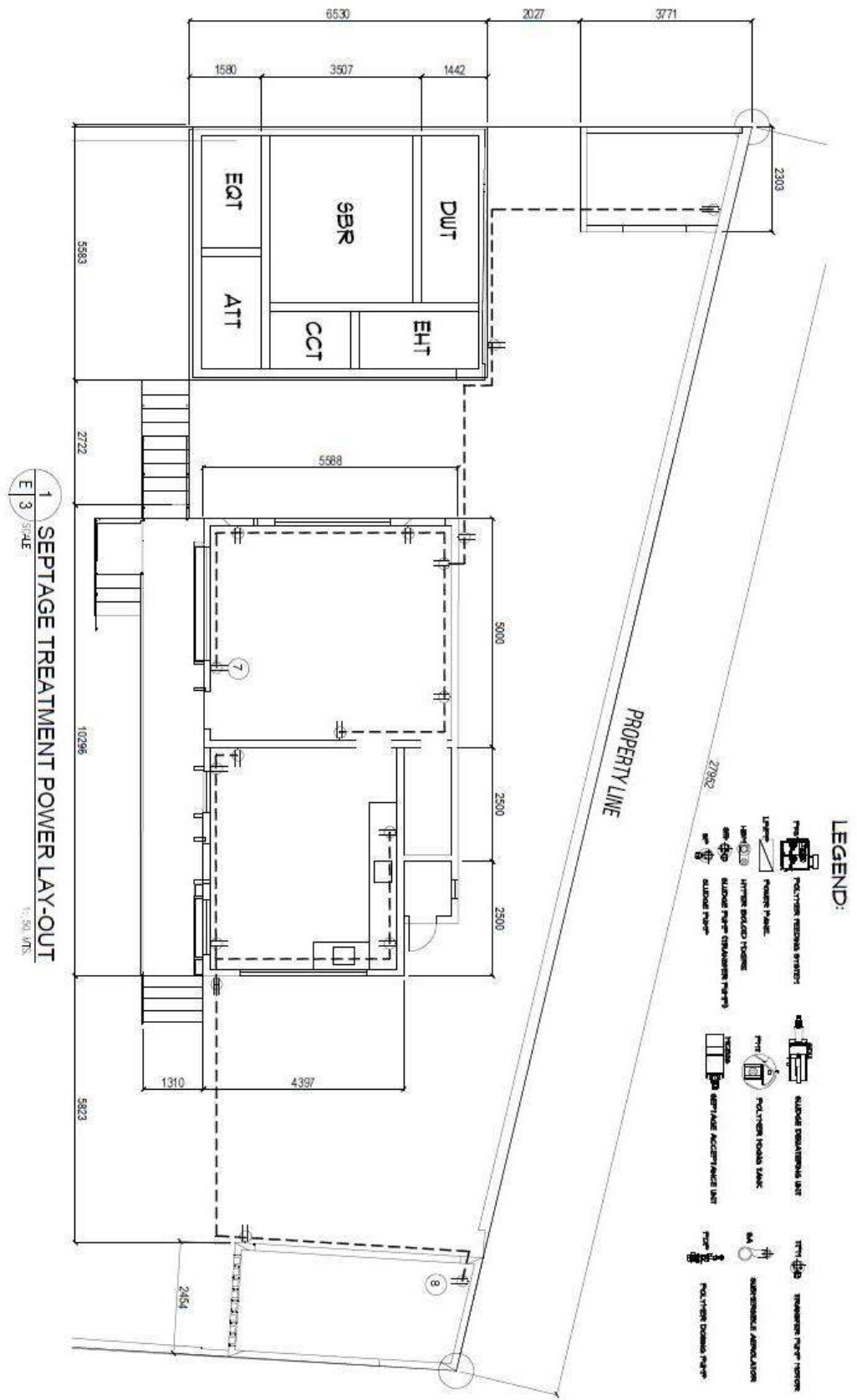


Callout	Description	Callout	Description	Callout	Description
D1	TYPE ALUM. SLIDING WIND. LOCATION CORNR. BLK. REGRD 1 SET	D3	TYPE PWD DOOR. LOCATION TOILET REGRD 3 SETS	D5	TYPE STEEL SHLDR DOOR. LOC. GEN. SFT ROOM REGRD 1 SET
D2	TYPE ALUM. SLIDING WIND. LOC. SFT RM. WINDOW ROOMS REGRD 5 SETS	D4	TYPE STEEL SHLDR DOOR. LOC. GEN. SFT ROOM REGRD 1 SET	D6	TYPE STEEL SHLDR DOOR. LOC. SFT RM. REGRD 1 SET
W1	TYPE ALUM. SLIDING WIND. LOCATION CORNR. ROOM REGRD 1 SET	W3	TYPE ALUM. SLIDING WIND. LOCATION CABIN. CONTROL RM. REGRD 2 SETS	W5	TYPE ALUM. SLIDING WIND. LOCATION CABIN. CONTROL RM. REGRD 2 SETS
W2	TYPE ALUM. SLIDING WIND. LOCATION LAB. OFFICE. W/A. REGRD 1 SET	W4	TYPE ALUM. SLIDING WIND. LOCATION CONTROL. BLK. REGRD 2 SETS	W7	TYPE ALUM. SLIDING WIND. LOCATION W/STORAGE. & SHRETT. RM. REGRD 4 PCE.

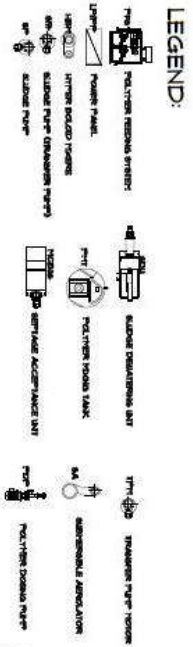
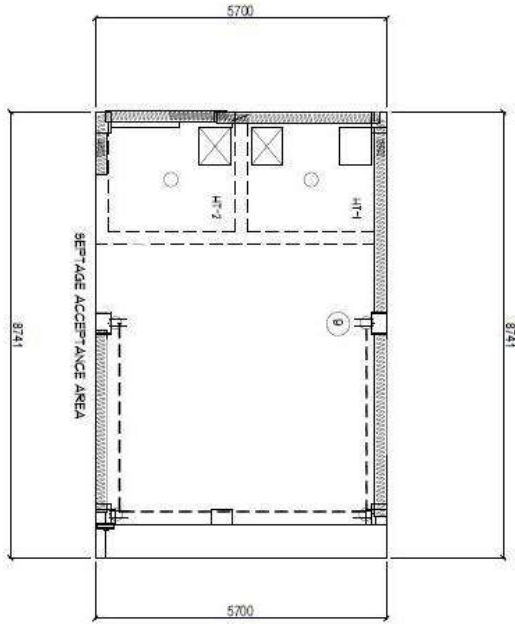


1 SEPTAGE TREATMENT LIGHTING LAY-OUT
 SCALE: 1:50 VTS



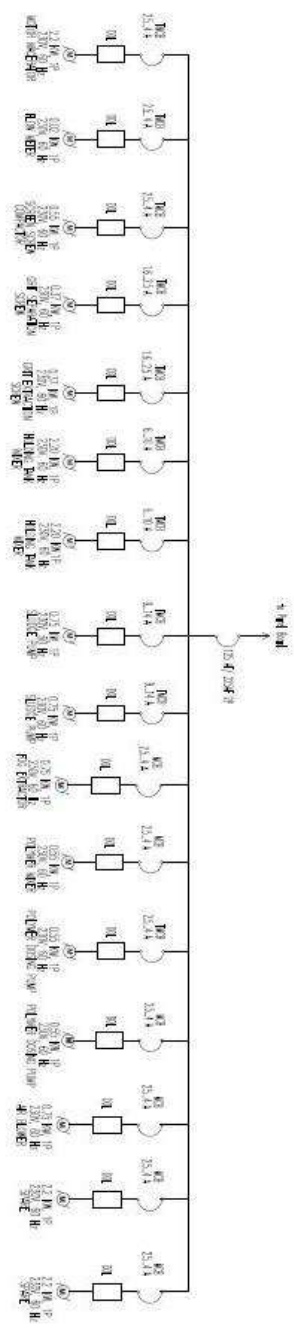


PROPERTY LINE

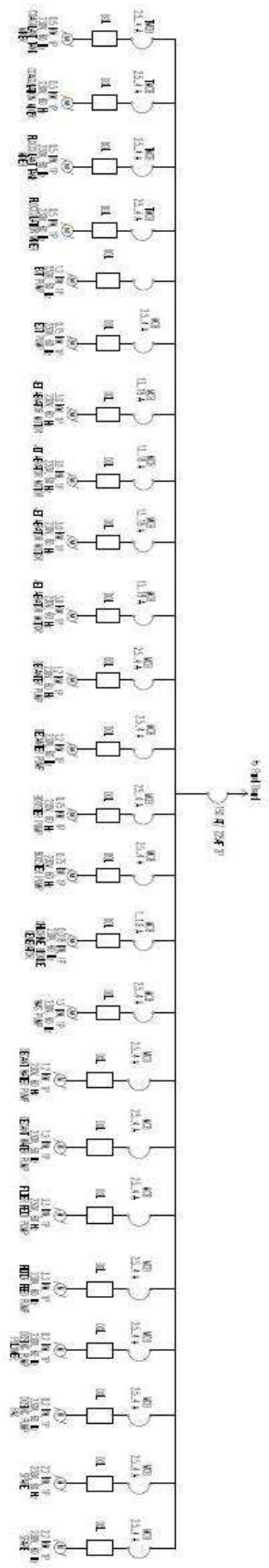


PROPERTY LINE

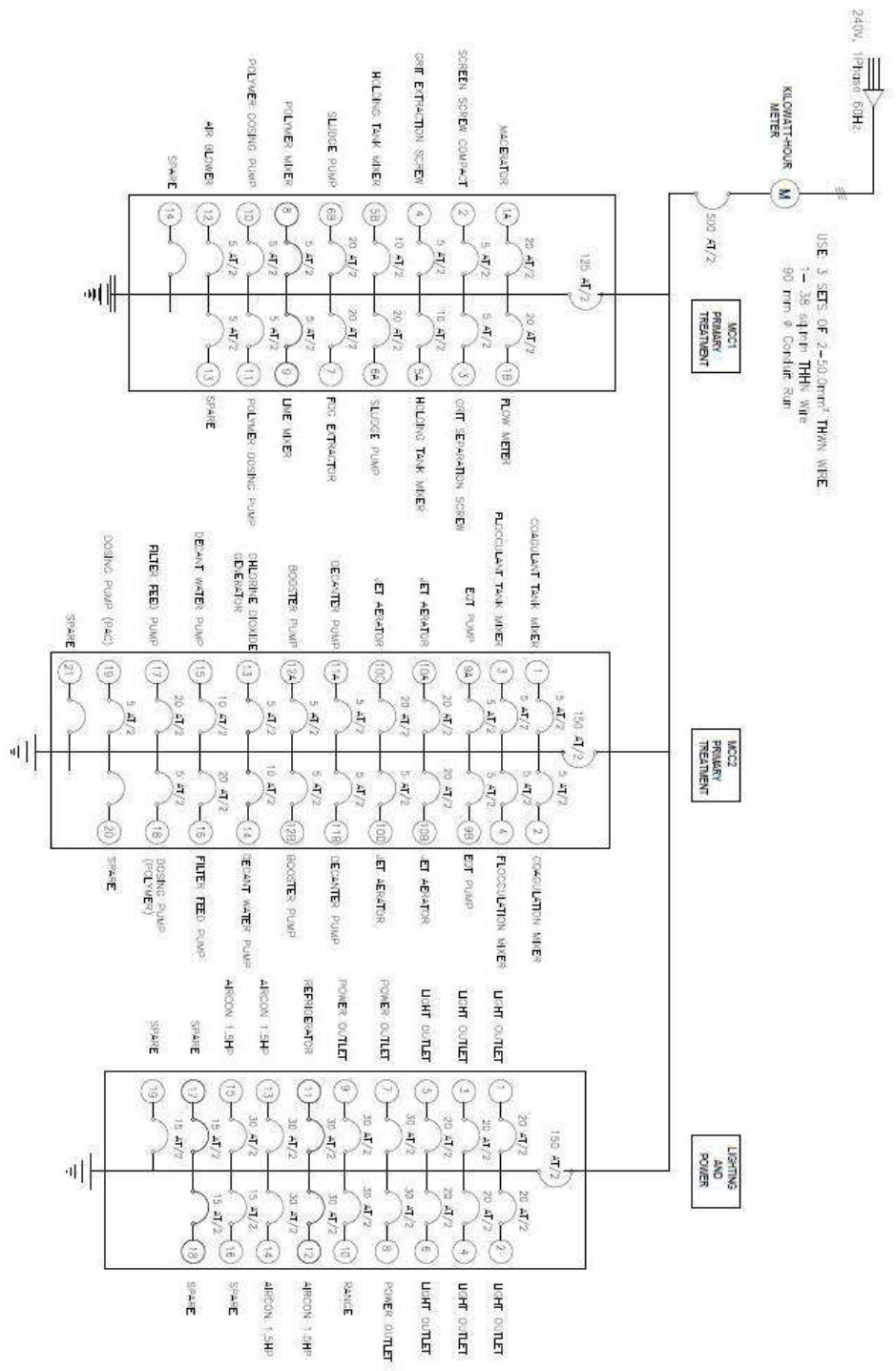
1 SEPTAGE TREATMENT POWER LAY-OUT
 E 4 SCALE
 1" = 50' (PT)



1 SINGLE LINE WIRING DIAGRAM (MCC1)
 E 5 SCALE
 NTS



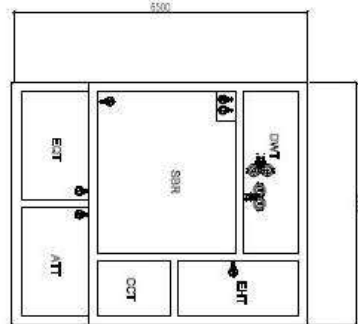
2 SINGLE LINE WIRING DIAGRAM (MCC2)
 E 5 SCALE
 NTS



1 SINGLE LINE DIAGRAM (MCC1), (MCC2) AND (LP SPTP)

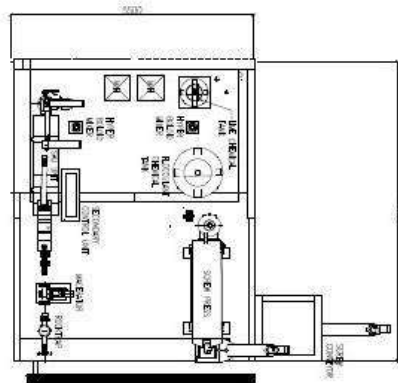
E 6 SCALE

MTS

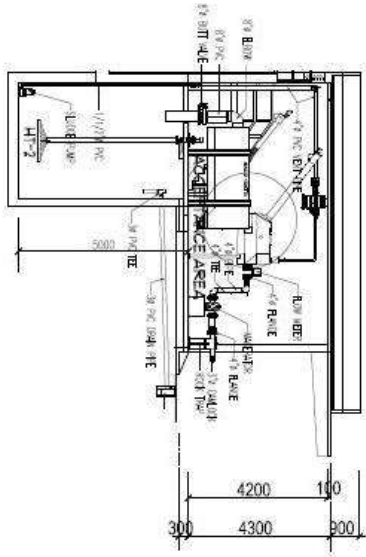


- LEGEND:
- EHT= EFFLUENT HOLDING TANK
 - CCT= CHLORINE CONTACT TANK
 - ATT= ANOXIC TREATMENT TANK
 - DWT= DEWATERING TANK
 - SBR= SEQUENTIAL BATCH REACTOR
 - EQT= EQUALIZATION TANK
 - HT= SLUDGE HOLDING TANK

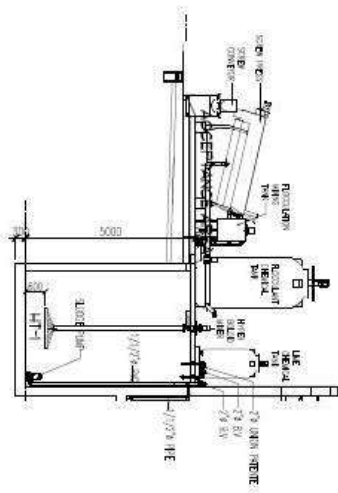
1 SPTP, LOWER GROUND EQUIPMENT LAY-OUT
 MET SCALE 1:25 MET



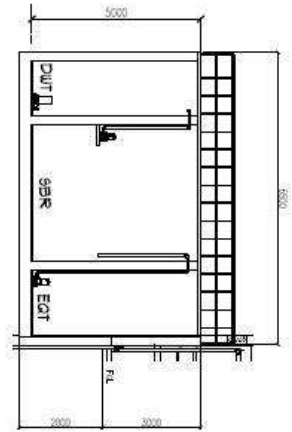
2 SPTP, UPPER FLOOR EQUIPMENT LAY-OUT
 MET SCALE 1:25 MET



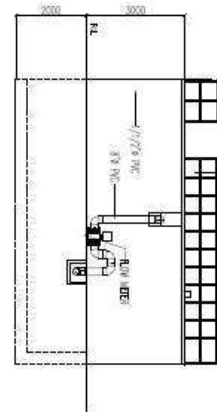
3 SPTP, SECTION THRU HT-2, ACCEPTANCE AREA
 MET SCALE 1:25 MET



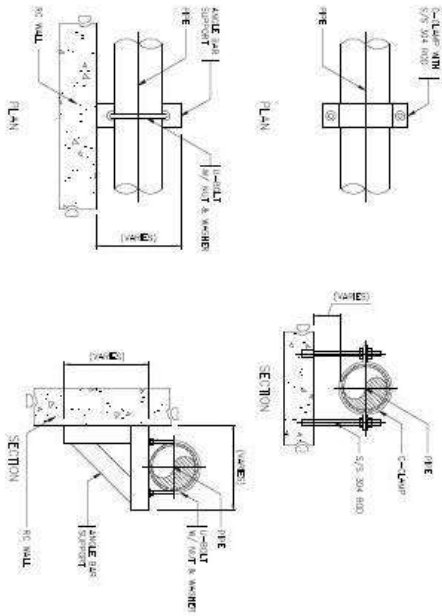
4 SPTP, SECTION THRU HT-1, ACCEPTANCE AREA
 MET SCALE 1:25 MET



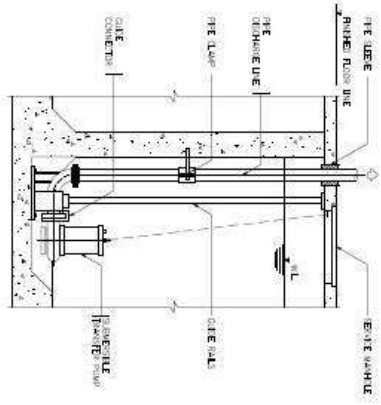
ME1 SCALE
SPTP SECTION THRU DWT, SBR, EQT AND HT-2
1:20 REF.



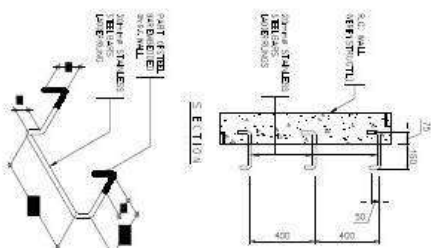
ME2 SCALE
SPTP SECTION THRU CONVEYOR AND SCUMTRAP
1:20 REF.



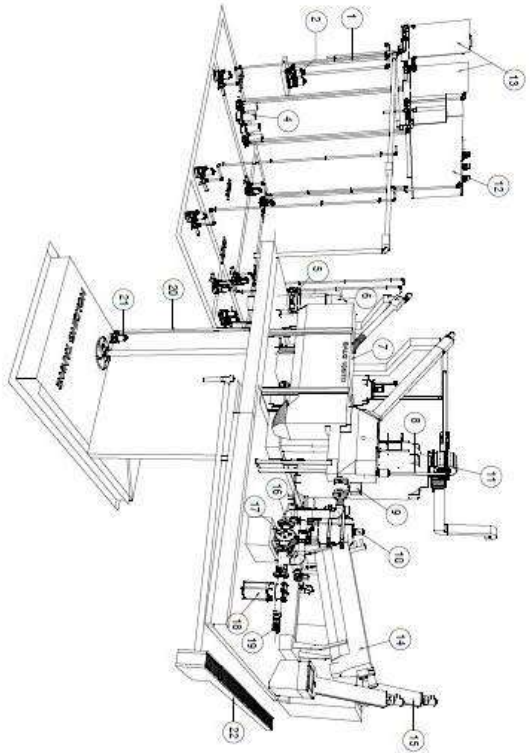
ME3 SCALE
TYPICAL PIPE SUPPORT DETAIL
1:10 REF.



ME4 SCALE
TYPICAL PUMP INSTALLATION DETAIL
1:10 REF.



ME5 SCALE
TYPICAL RING DETAIL
1:10 REF.

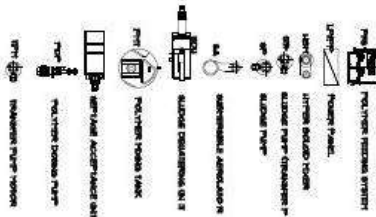


1 SPTP, DWT, 9BR, EQT AND HT-2, ISOMETRIC MECH. PIPING
ME 3 1/24 1.0.01

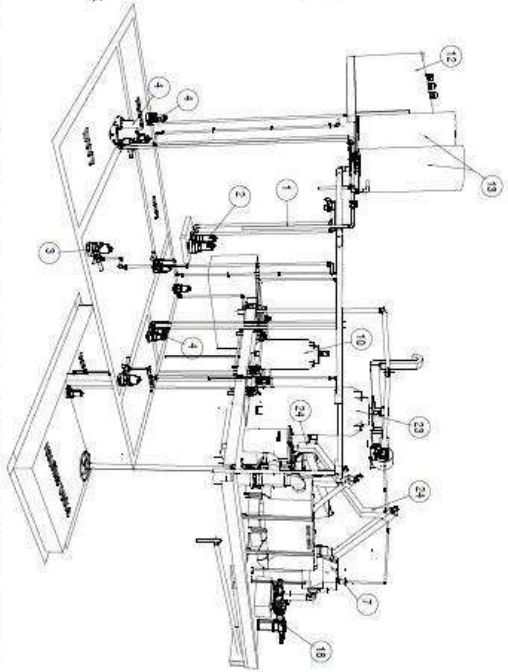
GENERAL NOTES:

1. ALL SERVICE RUNS, CONNECTIONS, ACCESSORIES, AUXILIARY EQUIPMENT AND SIZES SHOWN SHALL BE PROVIDED TO SURE THESE ARE APPLICABLE AND LINE INDICATED.
2. ALL PIPE DIMENSIONS INDICATED INSIDE CLEAR DIMENSIONS ARE IN FT, UNLESS OTHERWISE INDICATED.
3. ALL PIPE SIZES ARE IN INCH.
4. AIR FLOW IS IN CFM.
5. ALL PRESSURE DROPS INDICATED IN SCHEDULES AND DRAWINGS ARE GUIDANCE ONLY. CONTRACTOR TO CHECK THE ABOVE AGAINST DESIGNER'S CALCULATIONS AND OBTAIN APPROVAL FROM DESIGNER SUBMITTED FOR APPROVAL.
6. ALL OPENINGS FOR PIPES SHALL NOT IN ANYWAY PENETRATE A STRUCTURAL RBG ON BEAMS UNLESS OTHERWISE AUTHORIZED.
7. PIPE EXTENSION FOR REFRIGERANT LINES, CONDENSATE DRAIN LINES SHALL BE PROVIDED WITH PIPE INSULATION AS REQUIRED.
8. MINIMUM SIZE OF AIR CONDITIONING DRAIN PIPES SHALL BE 1/2 INCH.
9. PROVIDE VIBRATION ISOLATOR ON ALL EQUIPMENT.
10. PROVIDE ENCLOSURE FOR ALL PIPE INSIDE THE BUILDING.
11. THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF EQUIPMENT'S SHOWN IN THE PLANS AT SITE.
12. ALL WORKS INCLUDING ACCESSORIES, CONNECTIONS OF DRAIN LINES TO EXISTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

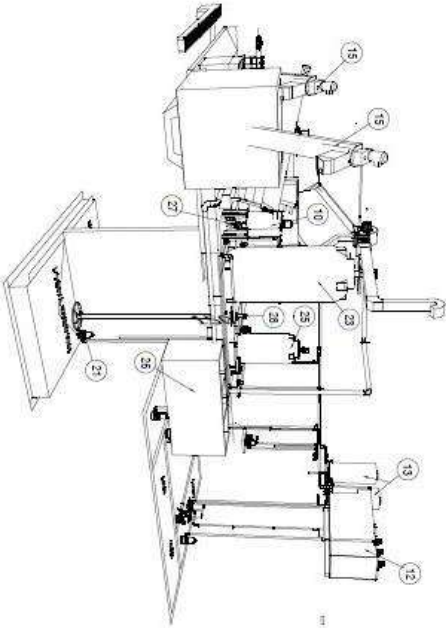
LEGEND:



NUM.	DESCRIPTION
1	3/4" DIA. P.V.C. PIPE
2	DECANTER PUMP
3	ABSORBER PUMP
4	TRANSFER PUMP
5	100MM DIA. FLANGE
6	100MM DIA. ELBOW
7	SAULINUT
8	30MM DIA. VENT PIPE
9	EQUILIBRIUM TANK
10	EXHAUST
11	CLUSTER TANK
12	INSULATION SYSTEM
13	SCREW PRESS
14	CONVEYOR
15	100MM DIA. FLANGE
16	MIXER/BLINDER
17	ROCK TRAP
18	3/4" DIA. GATE VALVE
19	3/4" DIA. PIPE
20	SLIDE VALVE (TRANSFER)
21	DRAIN TRENCH
22	FLOCCULANT CHEMICAL TANK
23	STAINLESS STEEL
24	LIFE CHEMICAL TANK
25	SCUMMUP TANK
26	DRAINAGE PUMP
27	3/4" DIA. PIPE
28	HYDROBOLIC TOWER

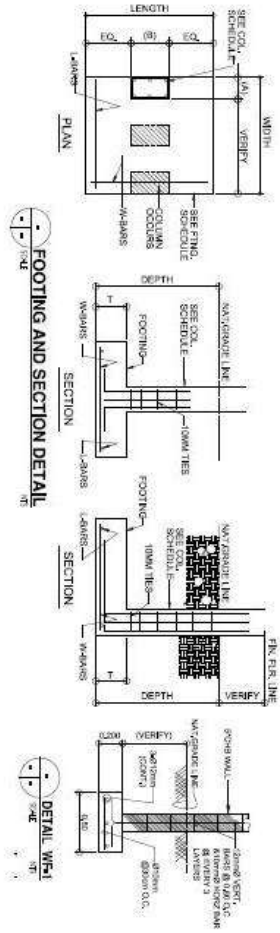
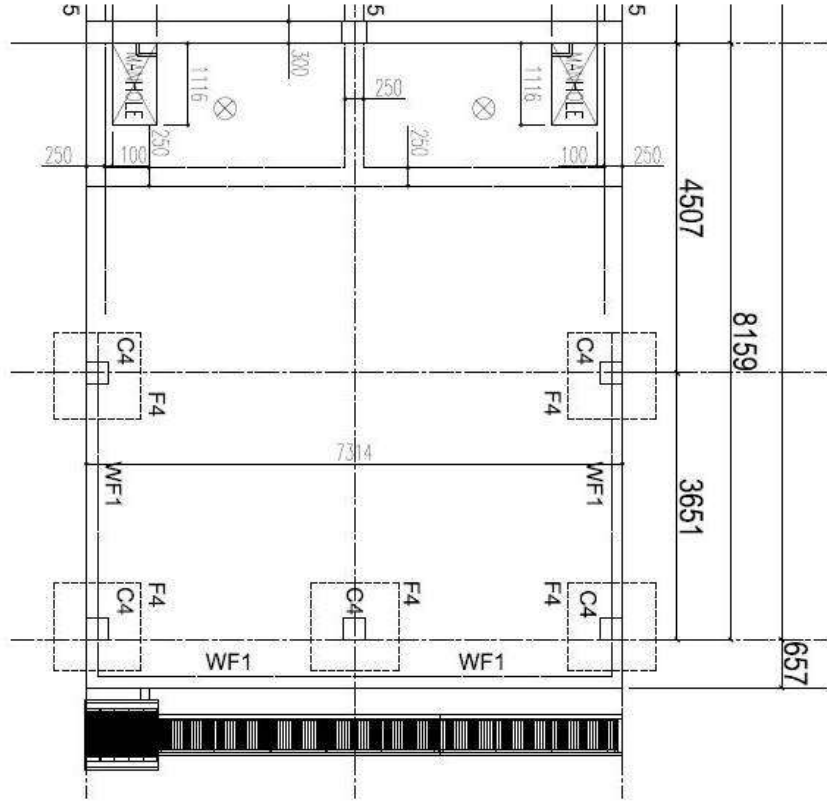


2 SPTP, DWT, 9BR, EQT AND HT-2, ISOMETRIC MECH. PIPING
ME 3 1/24 1.0.01



3 SPTP, HT-1, CONVEYOR AND SCUMMUP ISOMETRIC MECH. PIPING
ME 3 1/24 1.0.01

1 HOLDING TANK FOUNDATION PLAN

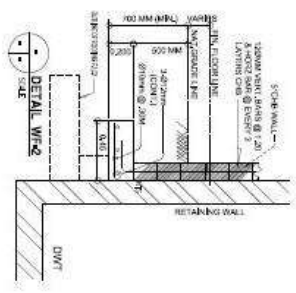


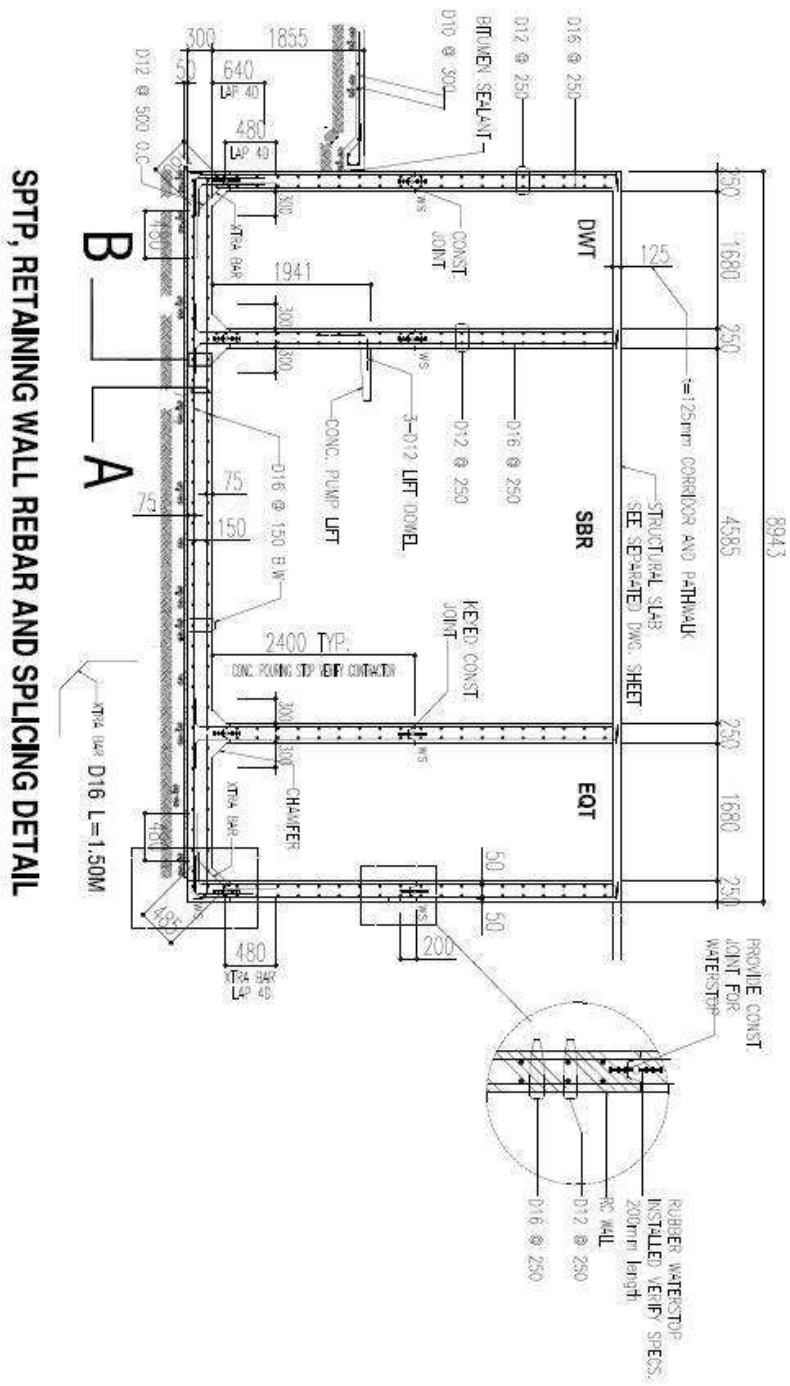
FOOTING SCHEDULE

MARK	THK (mm)	SIZE (mm)	NO. POS. OF BARS EXHAUSTIVE	DEPTH OF EXCAVATION (mm)	REMARKS
F1	300	1200	6-ROUND BAR	1200	ISOLATED FTG
F2	300	1000	7-ROUND BAR	1000	ISOLATED FTG
F3	300	1000	5-ROUND BAR	1000	ISOLATED FTG
F4	300	1000	5-ROUND BAR	1000	ISOLATED FTG

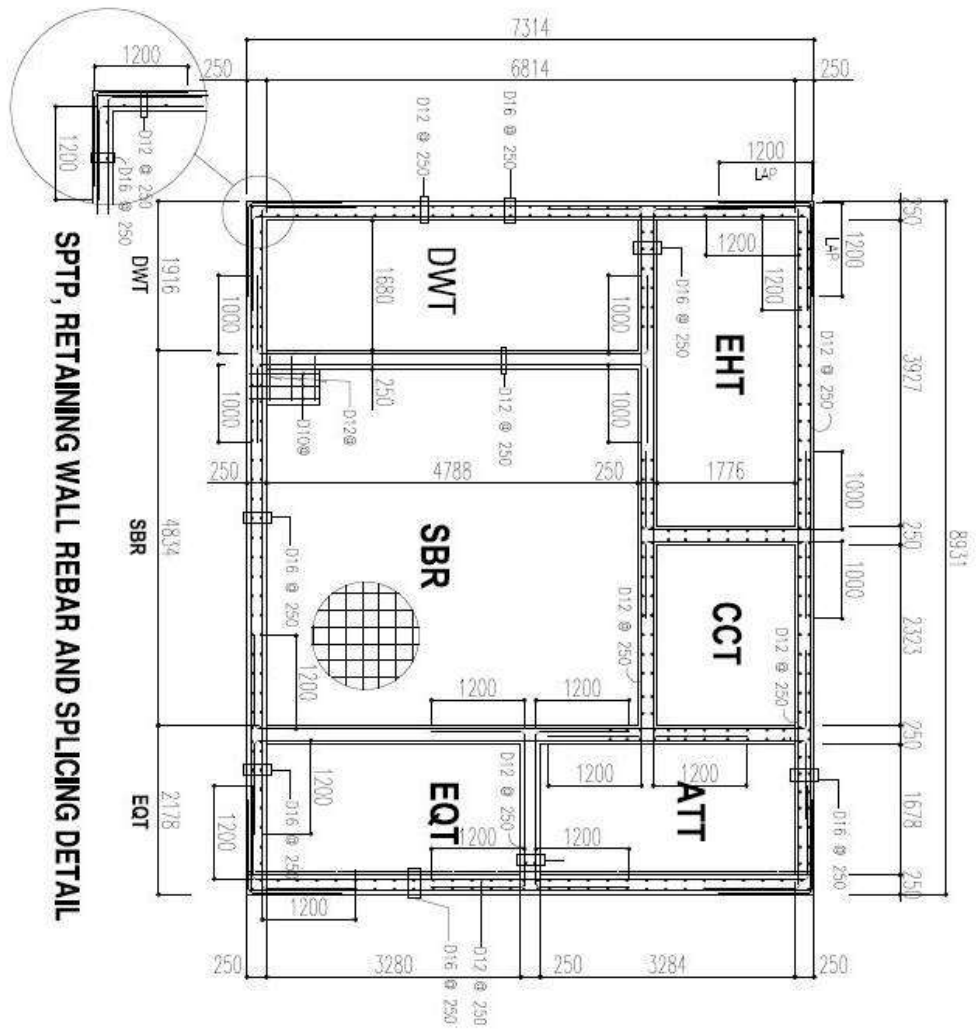
COLUMN SCHEDULE

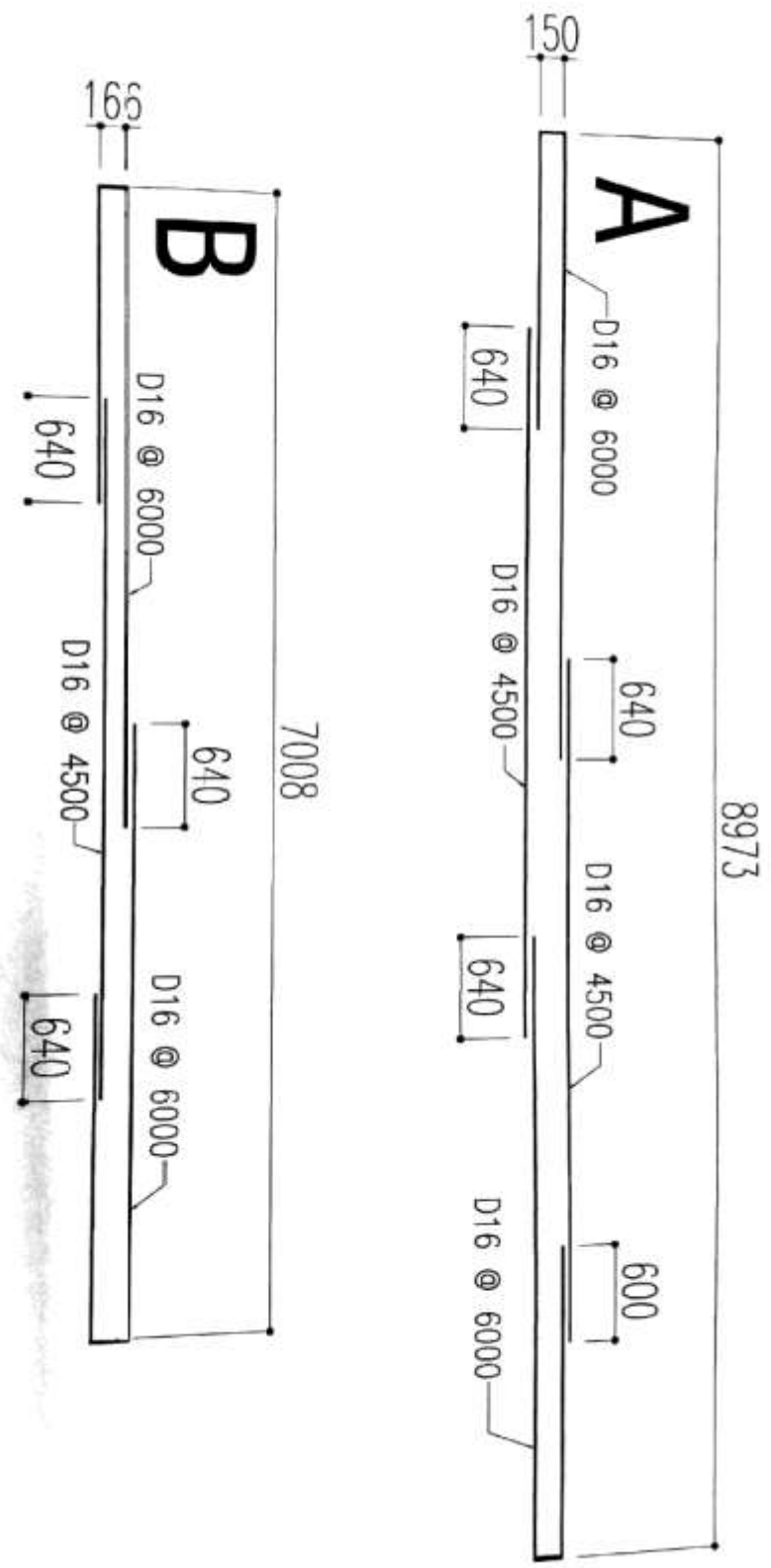
MARK	THK (mm)	(A)	(B)	NO. POS. OF BARS	DEPTH OF THIS (A)	REMARKS
C4	200	200	400	8-ROUND BAR	400	400 DIA. 200 X 10.0 A.R. @ 120MM C.C.
C4	200	200	300	6-ROUND BAR	300	400 DIA. 200 X 10.0 A.R. @ 120MM C.C.
C4	200	200	350	6-ROUND BAR	350	400 DIA. 200 X 10.0 A.R. @ 120MM C.C.
C4	200	200	300	6-ROUND BAR	300	400 DIA. 200 X 10.0 A.R. @ 120MM C.C.
C4	200	200	300	6-ROUND BAR	300	400 DIA. 200 X 10.0 A.R. @ 120MM C.C.



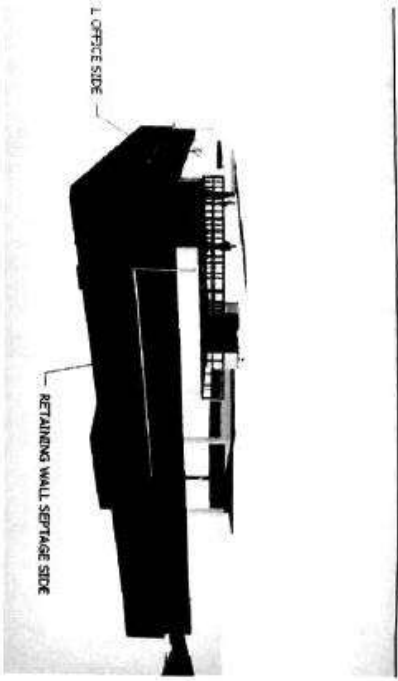


SPTP, RETAINING WALL REBAR AND SPLICING DETAIL

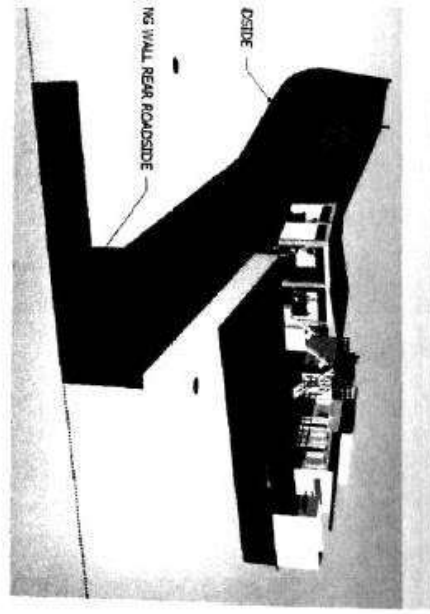




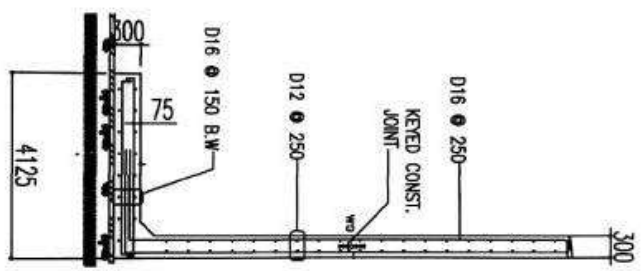
GROUND SLAB CUTTING LIST



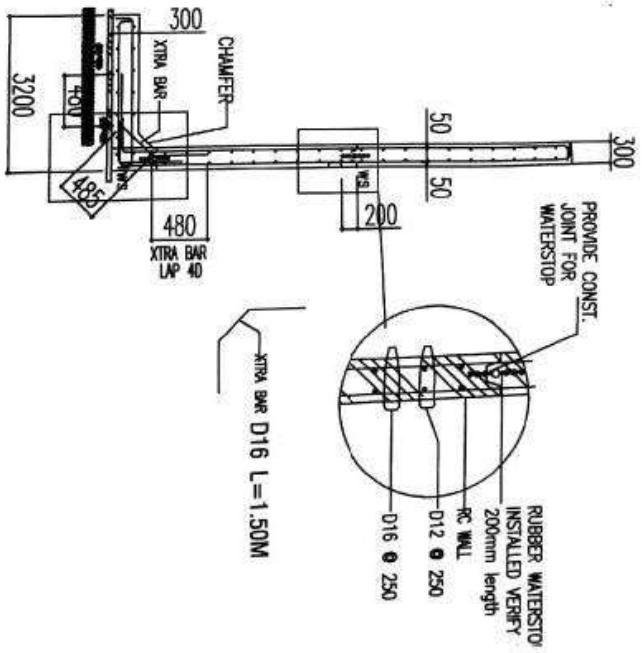
DETAIL RETAINING WALL DETAIL (WALL OFFICE AND SPTP SIDE)



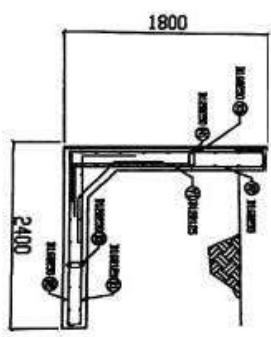
UL RETAINING WALL DETAIL (REAR ROAD SIDE AND ROADSIDE)



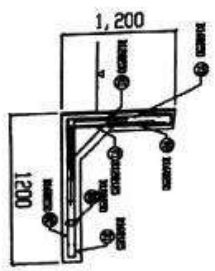
DETAIL RETAINING WALL DETAIL (BLDG. SIDE)



DETAIL RETAINING WALL DETAIL (WALL SIDE)



DETAIL RETAINING WALL DETAIL (REAR WALL SIDE)



DETAIL RETAINING WALL DETAIL (ROAD SIDE)

Section VIII. Bill of Quantities

We/I shall provide all the necessary manpower, materials, equipment and supervision to the accomplishment of the following work items:

Name of Bidder: _____

Construction, Supply, Installation, Commissioning and Process Proving of a 15 CMD Septage Treatment Plant and Supply and Delivery of 2 units 3.5 cu.m. Capacity Septage Vacuum Trucks

Quantities for Bidding:

	ITEM DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL COST
I. Vacuum Trucks					
1.1	Vacuum truck 3.5 cum capacity	2	units		
<i>Subtotal I</i>					
II. Septage Treatment Plant (SpTP) Primary Equipment					
2.1	Rock Trap	1	unit		
2.2	Macerator	1	unit		
2.3	Package Treatment Unit	1	unit		
2.4	Hyperbolic Mixer	1	unit		
2.5	Sludge Pump	2	units		
2.6	Chemical Tank & Mixer	2	sets		
2.7	Chemical Dosing Pump	2	units		
2.8	Flocculation Static Mixer	2	units		
2.9	Screw Press Dewatering Unit	1	unit		
2.10	Flow Meter (Acceptance)	2	units		
2.11	Control Automation panels	1	set		
<i>Subtotal II</i>					
III. SpTP Secondary Equipment					
3.1	Equalization Tank Aerator	1	set		
3.2	Equalization Tank/Transfer Pump	2	units		
3.3	SBR Submersible Aerator	2	units		
3.4	Decanter Pump	1	unit		
3.5	Anoxic Tank Mixer	1	unit		
3.6	SBR Control Automation panels	1	set		
3.7	Waste Activated Sludge (WAS) Transfer Pump	1	unit		
<i>Subtotal III</i>					
IV. Disinfection System					
4.1	Chlorine Dioxide Dosing System	1	set		
4.2	Chlorine Contact Tank	1	unit		
4.3	Flow Meter (Effluent)	1	unit		
<i>Subtotal IV</i>					

V. Sludge Management					
5.1	pH adjuster system	1	set		
5.2	Polymer Tanks with dosing pump and mixer	2	sets		
5.3	Decant Water pump	2	sets		
5.4	Filter Feed Pump	2	sets		
5.5	Clarifier	1	set		
				<i>Subtotal V</i>	
VI. Tertiary Treatment and Reuse					
6.1	Non-potable transfer pump	1	unit		
6.2	Potable transfer pump	1	unit		
6.3	Water storage tanks	2	units		
6.4	Filtration feed pump	2	units		
6.5	Sand filter	1	unit		
6.6	Activated carbon filter	1	unit		
6.7	Pressure Tank	1	unit		
6.8	Control Automation panels	1	lot		
6.9	Water lines (pipes, etc)	1	lot		
				<i>Subtotal VI</i>	
VII. Other SPTP Requirements					
7.1	Electrical and mechanical works (Materials and labor)	1	lot		
7.2	Generator Set	1	unit		
7.3	Detailed engineering design	1	lot		
7.4	Mobilization	1	lot		
7.5	Permits and licenses (Building, Zoning, Fire ESC, ECC, Discharge, LLDA)	1	lot		
7.6	Temporary Facilities	1	lot		
7.7	Testing of materials	1	lot		
7.8	Soil testing	1	lot		
7.9	Safety requirements	1	lot		
7.10	As-Built/Shop Drawings	1	lot		
7.11	Operators Manual/Training	1	lot		
7.12	Process Proving (60 days) & Commissioning (30 days)	1	lot		
7.13	Contractors Insurance	1	lot		
7.14	Power supply lines (if not yet available upon site inspection)	1	lot		
				<i>Subtotal VII</i>	

VIII. Civil Works					
A	Mobilization of Personnel and Equipment to jobsite including temporary facilities and jobsite expenses				
B	Provision for construction safety, health hazards, utilities (Electricity, water, etc.) and other general requirements.				
C	Site development (access/perimeter road and walkway around treatment plant) and construction of perimeter fence				
	C.1 Earthworks (Site clearing, Grubbing and Earth moving by cut and fill)				
	C.2 Gravel bedding				
	C.3 Reinforcing steel bars				
	C.4 Concreting works				
	C.5 Perimeter fence with concrete column and beam				
	C.6 Drainage System				
	C.7 Backfill materials				
D	Reinforced concrete tank civil works				
	D.1 SPTR				
	D.2 Holding tanks				
E	Construction of primary treatment facilities building (Septage Acceptance and Unloading area)				
F	Construction of office, Laboratory, Genset, Control and Blower room with toilet & bath				
G	Contingencies, Overhead expenses and Construction Supervision				
H	Demobilization of Personnel and Equipment				
<i>Subtotal VIII</i>					
TOTAL PROJECT COST					

TOTAL BID PRICE IN WORDS: _____

This is to certify that we/I have prepared and/or checked and reviewed the Contract, Scope of Work, and prices submitted with this Bid.

Very truly yours,

 Authorized Representative
 Signature over Printed Name

Section IX. Bidding Forms

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Bid Form	155
Form of Contract Agreement	157
Omnibus Sworn Statement	159
Bid-Securing Declaration.....	162
IRR of Chapter 18 of P.D 856	164

Bid Form

Date: _____

IB¹ N°: _____

To: *[name and address of PROCURING ENTITY]*

Address: *[insert address]*

We, the undersigned, declare that:

- (a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract *[insert name of contract]*;
- (b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered below is: *[insert information]*;

The discounts offered and the methodology for their application are: *[insert information]*;

- (c) Our Bid shall be valid for a period of *[insert number]* days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract;
- (e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]*;
- (f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;
- (h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

¹ If ADB, JICA and WB funded projects, use IFB.

- (i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- (j) **We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].**
- (k) **We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.**

Name: _____

In the capacity of: _____

Signed: _____

Duly authorized to sign the Bid for and on behalf of: _____

Date: _____

Form of Contract Agreement

THIS AGREEMENT, made this *[insert date]* day of *[insert month]*, *[insert year]* between *[name and address of PROCURING ENTITY]* (hereinafter called the “Entity”) and *[name and address of Contractor]* (hereinafter called the “Contractor”).

WHEREAS, the Entity is desirous that the Contractor execute *[name and identification number of contract]* (hereinafter called “the Works”) and the Entity has accepted the Bid for *[insert the amount in specified currency in numbers and words]* by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be attached, deemed to form, and be read and construed as integral part of this Agreement, to wit:
 - (a) General and Special Conditions of Contract;
 - (b) Drawings/Plans;
 - (c) Specifications;
 - (d) Invitation to Bid;
 - (e) Instructions to Bidders;
 - (f) Bid Data Sheet;
 - (g) Addenda and/or Supplemental/Bid Bulletins, if any;
 - (h) Bid form, including all the documents/statements contained in the Bidder’s bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder’s response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity’s bid evaluation;
 - (i) Eligibility requirements, documents and/or statements;
 - (j) Performance Security;
 - (k) Notice of Award of Contract and the Bidder’s conforme thereto;
 - (l) Other contract documents that may be required by existing laws and/or the Entity.
3. In consideration of the payments to be made by the Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Entity to execute and complete the Works and remedy any defects therein in conformity with the provisions of this Contract in all respects.

4. The Entity hereby covenants to pay the Contractor in consideration of the execution and completion of the Works and the remedying of defects wherein, the Contract Price or such other sum as may become payable under the provisions of this Contract at the times and in the manner prescribed by this Contract.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

Signed, sealed, delivered by _____ the _____ (for the Entity)

Signed, sealed, delivered by _____ the _____ (for the Contractor).

Binding Signature of Procuring Entity

Binding Signature of Contractor

[Addendum showing the corrections, if any, made during the Bid evaluation should be attached with this agreement]

Omnibus Sworn Statement

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, *[Name of Affiant]*, of legal age, *[Civil Status]*, *[Nationality]*, and residing at *[Address of Affiant]*, after having been duly sworn in accordance with law, do hereby depose and state that:

1. **Select one, delete the other:**

If a sole proprietorship: I am the sole proprietor or authorized representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

If a partnership, corporation, cooperative, or joint venture: I am the duly authorized and designated representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

2. **Select one, delete the other:**

If a sole proprietorship: As the owner and sole proprietor or authorized representative of *[Name of Bidder]*, I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]* *[insert "as shown in the attached duly notarized Special Power of Attorney" for the authorized representative]*;

If a partnership, corporation, cooperative, or joint venture: I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, accompanied by the duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary's Certificate, whichever is applicable;

3. *[Name of Bidder]* is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. *[Name of Bidder]* is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. **Select one, delete the rest:**

If a sole proprietorship: The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

If a partnership or cooperative: None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

If a corporation or joint venture: None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:

a) Carefully examine all of the Bidding Documents;

b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;

c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and

d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of ___, 20__ at _____, Philippines.

Bidder's Representative/Authorized Signatory

SUBSCRIBED AND SWORN to before me this ____ day of [month] [year] at [place of execution], Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ____ day of [month] [year].

NAME OF NOTARY PUBLIC

Serial No. of Commission _____

Notary Public for _____ until _____

Roll of Attorneys No. _____

PTR No. _____ [date issued], [place issued]

IBP No. _____ [date issued], [place issued]

Doc. No. _____

Page No. _____

Book No. _____

Series of _____

* This form will not apply for WB funded projects.

Bid-Securing Declaration

(REPUBLIC OF THE PHILIPPINES)

CITY OF _____) S.S.

X-----X

Invitation to Bid *[Insert reference number]*

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1 (f), of the IRR of RA 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right;
 - c. I am/we are declared as the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month]* *[year]* at *[place of execution]*.

[Insert NAME OF BIDDER'S AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]

Affiant

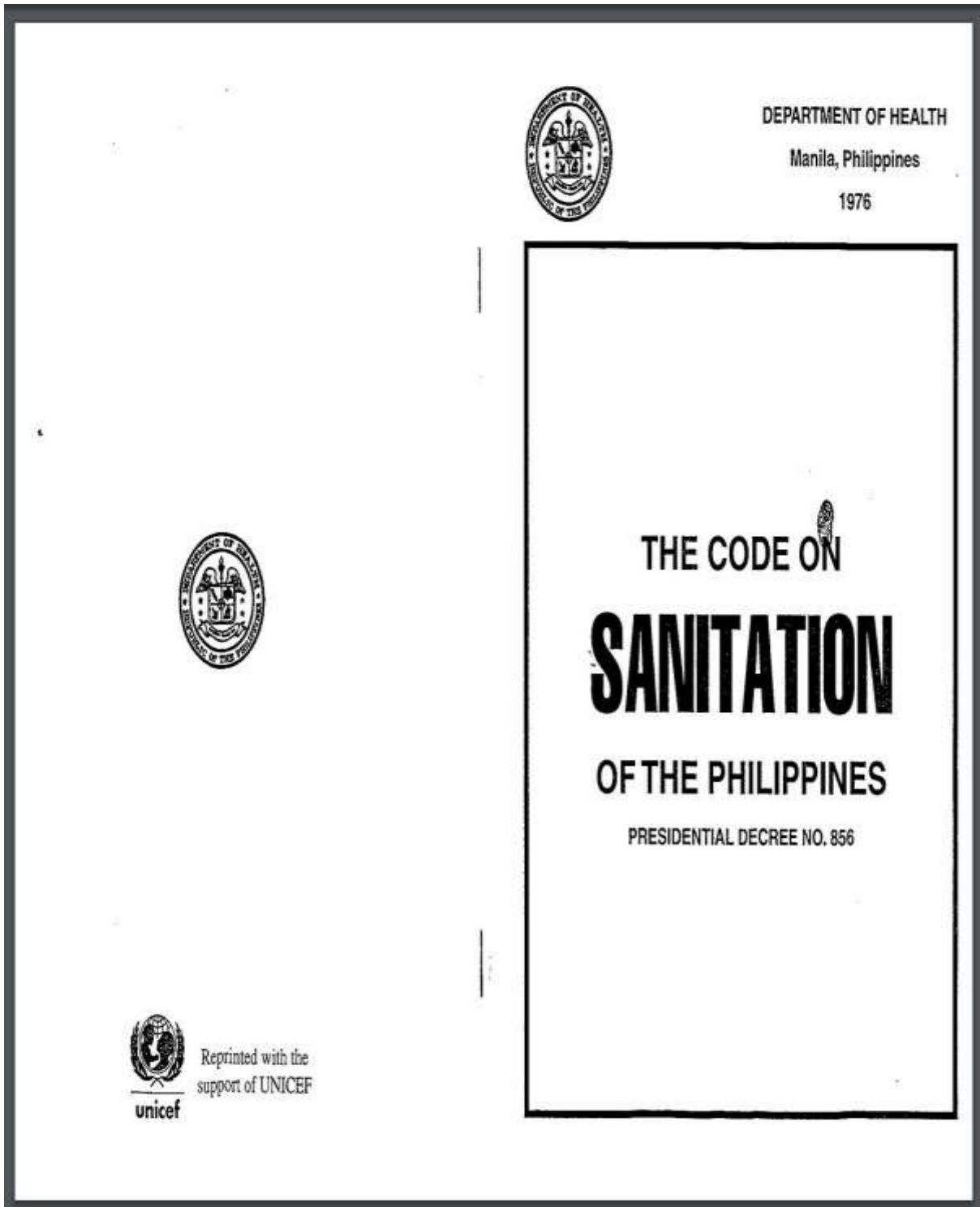
SUBSCRIBED AND SWORN to before me this __ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. _____.

Witness my hand and seal this ____ day of *[month]* *[year]*.

NAME OF NOTARY PUBLIC

Serial No. of Commission _____
Notary Public for _____ **until** _____
Roll of Attorneys No. _____
PTR No. __, *[date issued]*, *[place issued]*
IBP No. __, *[date issued]*, *[place issued]*
Doc. No. ____
Page No. ____
Book No. ____
Series of _____.

IRR of Chapter 18 of P.D 856



prescribed by the National Water and Air Pollution Control Commission.

SEC. 77. Determination of Septic Tank Capacity - The septic tank capacity may be determined from the estimated unit flow contained in Table I "Quantities of Sewage Flow," based on adequate detention time interval resulting in efficient sedimentation. Daily flow from metered results, may be used as estimated flow when available. For edifices with occupants, the number of persons to be served shall be computed on the number of rooms with each room considered as occupied by two persons or on the basis of the actual number of persons served by the tank, whichever is greater.

TABLE I
QUANTITIES OF SEWAGE FLOW

Type of Establishment	Gals. / Day / Person		
Small dwellings and cottages	50	Tourist camps or trailer parks	35 - 50
Large dwellings with numerous fixtures	75 - 100	Resort camps (night and day) with limited plumbing	50
Multiple family residence	50	Luxury camps	75 - 100
Rooming houses	40	Work or construction camps (semi-permanent)	50
Boarding houses	50	Day schools without cafeterias, gymnasiums or showers*	8
Hotels and motels	50	Day schools with cafeterias but no gyms or showers* (Quantity estimated from no. of meals served or 80% of enrollment)	12
Restaurants (toilet and kitchen wastes per person)	7 - 10	Day schools with cafeterias, gyms and showers* (Qty. estimated from max. number expected to use gyms and showers in one day)	20
Restaurants (kitchen wastes per meal served)	2 - 1 1/2 - 3	Boarding schools	75 - 100
Kitchen wastes at hotels, camps, boarding houses, etc., serving 3 meals/day	7 - 10	Day workers at schools and offices	15
		Hospitals* (Gallons per bed)	150 - 250
		Public institutions other than hospitals	75 - 125
		Factories (Gal./person/shift, exclusive of industrial wastes)	15 - 35
		Public picnic parks (toilet wastes only)	5
		Picnic parks, with bathhouse, showers and flush toilets	10
		Swimming pools and bathing places*	10

* Subsurface drain fields not recommended for secondary treatment.

Luxury residences and estates	100 - 150
Country clubs per resident members*	
Country clubs per member present*	25 - 50

SEC. 78. Sanitary Privies - The privy recommended for use is the sanitary privy. It shall conform with the following minimum requirements:

- It shall consist of an earthen pit, a floor covering the pit, and a water-sealed bowl. It shall be so constructed in order that fecal matter and urine will be deposited into the earthen pit which shall be completely fly-proof.
- The pit shall be at least one meter square.
- The floor should cover the pit tightly to prevent the entrance of flies. It shall be constructed of concrete or other impervious material.
- The water-sealed bowl shall be joined to the floor so as to form a water-tight and insect proof joint.
- A suitable building, shall be constructed to provide comfort and privacy for the users of the privy.
- Wooden floors and seat risers shall not be used.

SEC. 79. Drainage -

- Responsibility of cities and municipalities - It shall be the responsibility of all cities and municipalities to provide and maintain in a sanitary state and in good repair a satisfactory system of drainage in all inhabited areas where waste water from buildings and premises could empty without causing nuisance to the community and danger to public health.

- Connection to the municipal drainage system - Buildings or premises producing waste water shall be connected to the municipal drainage system in all areas where it exists.

SEC. 80. Special Precaution for Radioactive Excreta and Urine of Hospitalized Patient -

- Patients given high doses of radioactive isotope for therapy should be given toilet facilities separate from those used by "non-radioactive" patients.
- Radioactive patients should be instructed to use the same toilet bowl at all times and to flush it at least three times after its use.

CHAPTER XVIII - REFUSE DISPOSAL

SEC. 81. Definition of Terms - As used in this Chapter, refuse is an inclusive term for all solid waste products consisting of garbage, rubbish, ashes, night soil, manure, dead animals, street sweepings and industrial wastes.

SEC. 82. Responsibility of Cities and Municipalities - Cities and municipalities shall provide an adequate and efficient system of collecting, transporting and disposing refuse in their areas of jurisdiction in a manner approved by the local health authority.

SEC. 83. Additional Requirements -

- Occupants of buildings and residences shall: Provide a sufficient number of receptacles for refuse. Refuse in receptacles shall be protected against vermin and other animals.
- Refuse shall be disposed through a municipal collection service. If

- this service is not available, disposal shall be by incineration, burying, sanitary landfill or any method approved by the local health authority.
- c. Refuse shall not be thrown in any street sidewalk, yard, park or any body of water. It shall be stored in a suitable container while awaiting its final disposal.
 - d. Streets shall be kept clean by occupants or owners of properties lining the street from the line of the property to the middle of the street and from one property to the other.
 - e. Parks, plazas and streets adjacent to public buildings shall be kept clean by the local government concerned.

CHAPTER XIX — NUISANCES AND OFFENSIVE TRADES AND OCCUPATIONS

SEC. 84. Definition of Terms — As used in this Chapter, the following terms shall mean and include:

- a. Nuisance — Anything that injures health, endangers life, offends the senses or produces discomforts to the community.
- b. Offensive trades or occupations — These are the following:
 1. Soap boiling;
 2. Guts cleaning;
 3. Boiling of offal, bones, fat or lard*;

* Permissible if process is performed in a public slaughter-house under prescribed regulations.

** The use of such chemicals is permissible in the practice of pharmacy and in printing where ready-made lead types are used.

4. Manufacturing of glue or fertilizer;
5. Skin curing;
6. Scrap processing;
7. Manure storing;
8. Lime burning;
9. Lye making; and
10. Any manufacturing process in which lead, arsenic, mercury, phosphorous, or other poisonous substance is used**;

SEC. 85. Types of Nuisances — For the purpose of this Chapter, the following shall be considered nuisances:

- a. Public or private premises maintained and used in a manner injurious to health;
- b. Breeding places and harbors of vermin;
- c. Animals and their carcasses which are injurious to health;
- d. Accumulation of refuse;
- e. Noxious matter or waste water discharged improperly in streets;
- f. Animal stockage maintained in a manner injurious to health;
- g. Excessive noise; and
- h. Illegal shanties in public or private properties.

SEC. 86. Responsibilities of Owners, Managers or Operators — The owners, managers or operators of establishments shall:

- a. Secure a sanitary permit from the local health authority before establishing and operating their business or trade;
- b. Remove daily all injurious by products and wastes;
- c. Prevent the escape of industrial impurities and adopt methods to render them innocuous;

- d. Maintain working establishments and their premises clean and sanitary at all times;
- e. Store all materials properly to prevent emission of noxious or injurious effluvia.

CHAPTER XX — POLLUTION OF ENVIRONMENT

SEC. 87. General Provisions — For the purpose of this Chapter, the provisions of Republic Act No. 3931, the rules and regulations of the National Water and Air Pollution Control Commission promulgated in accordance with the provisions of Section 6 (a) 2 of the said Act, the provisions of Presidential Decree No. 480, and the rules and regulations of the Radiation Health Office of the Department of Health shall be applied and enforced.

SEC. 88. Authority of the Secretary — The Secretary is authorized to promulgate rules and regulations for the control and prevention of the following types of pollution:

- a. Pollution of pesticides and heavy metals;
- b. Pollution of food caused by chemicals, biological agents, radioactive materials, and excessive or improper use of food additives;
- c. Non-ionizing radiation caused by electronic products such as laser beams or microwaves;
- d. Noise pollution caused by industry, land and air transport and building construction;
- e. Biological pollutants including the causative agents of intestinal infections;
- f. Pollution of agricultural products through the use of chemical fertilizers

and plant pesticides containing toxic chemical substances and unsanitary agricultural practices; and

- g. Any other type of pollution which is not covered by the provisions of Republic Act No. 3931, the Rules and Regulations of the National Water and Air Pollution Control Commission, the provisions of Presidential Decree No. 480 and the rules and regulations of the Radiation Health Office of the Department of Health which is likely to affect community health adversely.

CHAPTER XXI — DISPOSAL OF DEAD PERSONS

SEC. 89. Definition — As used in this Chapter, the following terms shall mean:

- a. Burial grounds — cemetery, memorial park of any place duly authorized by law for permanent disposal of the dead.
- b. Embalming — preparing, disinfecting, and preserving a dead body for its final disposal.
- c. Embalmer — a person who practices embalming.
- d. Undertaking — the care, transport and disposal of the body of a deceased person by any means other than embalming.
- e. Undertaker — person who practice undertaking.
- f. Funeral establishment — any place used in the preparation and care of the body of a deceased person for burial.
- g. Remains — the body of a dead person.
- h. Burial — interment of remains in a grave, tomb or the sea.
- i. Disinterment — the removal or exhumation of remains from places of interment.

