REPUBLIC OF THE PHILIPPINES

POLOMOLOK WATER DISTRICT

Polomolok, South Cotabato

BIDDING DOCUMENTS

CONSTRUCTION OF POLOMOLOK WATER SUPPLY SYSTEM IMPROVEMENT PROJECT

February 2020

ADB

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BIDDING DOCUMENTS

CONSTRUCTION OF POLOMOLOK WATER SUPPLY SYSTEM IMPROVEMENT PROJECT

Local Water Utilities Administration

Water District Development Sector Project

Issued on: February 2020

Invitation for Bids No.: WDDSP-PolWS-IFB-CW02

OCB No.: WDDSP-PolWS-OCB-CW02

Employer: Polomolok Water District (PolWD)

ADB

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REPUBLIC OF THE PHILIPPINES
POLOMOLOK WATER DISTRICT
National Highway, Polomolok, South Cotabato
Tel Nos. (083) 500-9261 ; 500-9314 ; 500-9430
Telefax No. (083) 500-8008
Email Address : pol_wd@yahoo.com.ph

INVITATION TO BID FOR THE CONSTRUCTION OF POLOMOLOK WATER SUPPLY SYSTEM IMPROVEMENT PROJECT

1. The LOCAL WATER UTILITIES ADMINISTRATION has received a Loan from the Asian Development Bank toward the cost of the Water District Development Sector Project (WDDSP), and it intends to apply part of the proceeds of this loan to payments under the contract for the Polomolok Water Supply Improvement Project.

2. The Polomolok Water District now invites bids for the construction of pumping facilities, treatment facilities, site development, powerline extension, pipelaying (11.4 kilometers transmission and distribution mains) and other related works. Completion of the Works is required within eighteen (18) months. Bidders should have completed, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Sub-section 5, Section II. Instructions to Bidders and the corresponding Bid Data Sheet.

3. Bidding will be conducted in accordance with relevant procedures for open competitive bidding as specified in the IRR of RA 9184 (R.A. 9184), with some amendments, as stated in these bidding documents and is open to all bidders from eligible source countries as defined in the applicable procurement guidelines of ADB. The contract shall be awarded to the Lowest Calculated Responsive Bidder (LCRB) who was determined as such during post-qualification. The approved budget for the contract (ABC) is **PhP90,636,820.00**.

4. Interested bidders may obtain further information from the Polomolok Water District and inspect the Bidding Documents at the address given below from 8:30 a.m. – 4:30 p.m. except during weekends and non-working holidays.

5. A complete set of Bidding Documents may be acquired by the interested bidders on **8 February 2020** from the address below and upon payment of the applicable fee for the bidding documents, in the amount of **PhP25,000.00.**

It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS), **www.philgeps.gov.ph**, and the website of the Polomolok Water District, **www.polwaterdistrict.gov.ph** provided that bidders shall pay the applicable fee for the Bidding Documents not later than the submission of their bids.

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6. The Polomolok Water District will hold a Pre-Bid Conference on **17 February 2020** at **10:00 a.m.** at the Conference Room, 2F, Administration Building, PolWD Office, National Highway, Polomolok, South Cotabato, which shall be open to prospective bidders.

7. Bids must be duly received by the BAC Secretariat at the address below on or before **10:00 a.m. on 5 March 2020**. All bids must be accompanied by a Bid Security in the amount of not less **PhP1,812,800.00** in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit.

   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. The Polomolok 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, in accordance with Section 41 of RA 9184 and its IRR, without thereby incurring any liability to the affected bidder orbidders.

9. For further information, please refer to:

   Ms. Myrna Badilles Belgado
   Bids and Awards Committee Secretariat
   Polomolok Water District
   National Highway, Polomolok
   South Cotabato 9504
   Telephone No.: 63-83-5008008
   Facsimile No.: 63-83-5008008
   Email Address: **pol_wd@yahoo.com.ph**
   Website address: polwaterdistrict.gov.ph

(SGD) ENGR. CECIL D. MIRASOL
BAC Chairperson

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**.

92 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.

93 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 Platinum Membership in accordance with Section 8.5.2 of the IRR. For procurement to be performed overseas, it shall be subject to the Guidelines tobe issued by the GPPB.

(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. *For biddings conducted by LGUs, the cashier's/manager's check may be issued by other banks certified by the BSP as authorized to issue such financial instrument.*	Two percent (2%)
(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. *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.*	
(c) Surety bond callable upon demand issued by a surety or	Five percent (5%)

insurance company duly certified by the Insurance Commission as authorized to issue such security.	

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)(i) 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. *For biddings conducted by the LGUs, the Cashier's/Manager's Check may be issued by other banks certified by the BSP as*	Ten percent (10%)

authorized to issue such financial instrument.	
(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. *For biddings conducted by the LGUs, 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.*	
(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.	Thirty percent (30%)

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

Bid Data Sheet

ITB Clause	
1.1	The Procuring Entity is Polomolok Water District.
1.2	The name of the Contract is Polomolok Water Supply Improvement Project. The identification number of the Contract is WDDSP-PolWS-OCB-02 The lot(s) and reference is: One (1)
2	The Funding Source is the Asian Development Bank (ADB) through Loan No. 3389-PHI. The name of the Project is Water District Development Sector Project. Payments by the Foreign Funding Source will be made only at the request of the Procuring Entity and upon approval by the Executing Agency, Local Water Utilities Administration in accordance with the terms and conditions of Loan No. 3389-PHI hereinafter called the "Financing Agreement" and will be subject in all respect to the terms and conditions of that Financing Agreement and the applicable law. No party other than the Procuring Entity shall derive any rights from the Financing Agreement or have any claim to the funds.
3.1	ADB's Anticorruption Policy requires Borrowers (including beneficiaries of ADB-financed activity), as well as Bidders, Suppliers, and Contractors under ADB-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, ADB (a) defines, for the purposes of this provision, the terms set forth below as follows: (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party; (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including

	influencing improperly the actions of another party; (ii) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an ADB investigation; (b) making false statements to investigators in order to materially impede an ADB investigation; (c) failing to comply with requests to provide information, documents or records in connection with an Office of Anticorruption and Integrity (OAI) investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding ADB's contractual rights of audit or access to information; and (iii) "integrity violation" is any act which violates ADB's Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB's Anticorruption Policy, including failure to adhere to the highest ethical standard. (b) will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract; (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of ADB financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation; (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB's Anticorruption Policy and Integrity Principles and Guidelines (both as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in ADB-financed, administered, or supported activities or to benefit from an ADB-financed, administered, or supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and (e) will have the right to require that a provision be included in bidding documents and in contracts financed by ADB, requiring Bidders, suppliers, and contractors to permit ADB or its representative to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

5.1	Eligible Bidders are as described in ADB Procurement Guidelines as stated in the Financing Agreement and as described on ADB's web page **www.adb.org** An Eligible Bidder shall be deemed to have the nationality of a country if it is a citizen or constituted or incorporated, and operates in conformity with the provisions of the laws of that country.
5.2	Eligible Bidders are as described in ADB Procurement Guidelines as stated in the Financing Agreement and as described on ADB's web page **www.adb.org**.
5.4	For this purpose, similar contracts shall refer to contracts which have the same major categories of work: pipelaying, construction of pumphouse, and installation of electro-mechanical equipment.
8.1	Subcontracting is not allowed.
8.2	Not applicable.
9.1	The Procuring Entity will hold a pre-bid conference for this Project on **17 February 2020, 10:00 a.m.** at: **Polomolok Water District** National Highway, Polomolok South Cotabato 9504
10.1	The Procuring Entity's address is: **Engr. Cecil D. Mirasol** Chairperson, Bids and Awards Committee Polomolok Water District National Highway, Polomolok South Cotabato 9504 Telefax No.: 63-83-5008008 Email Address: pol_wd@yahoo.com.ph
12.1	The first envelope shall contain the following eligibility and technical documents: a. Eligibility Requirements i. Registration Certification of the Company; ii. List of relevant contracts that comply to the experience requirement as specified in ITB Clause 5.4; iii. Audited financial statement for the past two years; iv. In case of Joint Venture, the JV Agreement, if existing, or a signed statement from the partner companies that they will enter into a JV in case of award of contract; b. Technical Documents v. Project Requirements, which shall include the following:

(v.1) 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; and

(v.2) 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;

vi. Bid Security or a Bid Securing Declaration as required in the ITB 18;

vii. Sworn statement in accordance with Section 25.3 of the IRR of RA 9184 and using the form prescribed in Section VIII. Bidding Forms; and

viii. Credit line from a Universal or Commercial Bank extended in favor of the bidder if awarded the contract for the project.

Foreign bidders may submit the equivalent documents, if any, issued by the country of the foreign bidder.

12.1(a)(iii)

Category B – Medium A (General Engineering - Water Supply)
Foreign bidders may submit their Valid Philippine Contractors Accreditation Board (PCAB) license or special PCAB License in case of joint ventures, and registration for the type and cost of the contract for this Project as a pre-condition for award as provided in the Financing Agreement.

12.1(b)(ii.2)

A minimum relevant work experience is required for key personnel to be engaged/provided by the contractor:

Key Personnel	General Experience	Relevant Experience
Project Manager	10	5
Project Engineers - 2	5	5
Materials Engineer	5	5
Safety Practitioner	5	5
Foremen - 3	5	5

12.1(b)(iii.3)

The minimum major equipment requirements are the following:

Equipment	Capacity	No. of Units
Backhoe	6-tonner	2
Payloader		1
Mini-Dump Truck	3 cum	1
Concrete Mixer	1-bagger	2
Water Truck with Tank	3 cum	1
Truck (elf or equal)	5 tons	1
Surveying Instrument		1
Concrete Saw/Cutter		2
Concrete Vibrator		3
Plate Compactor		2
Compressor w/ Jack Hammer		2

	<table><tr><td>Engine Driven Welding Machine</td><td>300A</td><td>2</td></tr><tr><td>Cutting Outfit</td><td></td><td>2</td></tr></table>
13.1	No additional requirements.
13.1(b)	This shall include the following document: 1) 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; and 2) Cash flow by quarter or payment schedule.
13.2(a) and (b)	ABC does not apply as ceiling for bid prices
14.2	No further instructions.
16.1	The bid prices shall be quoted in Philippine Pesos.
16.3	No further instructions.
17.1	Bids will be valid within one hundred twenty (120) calendar days from receipt of bids to **3 July 2020**.
18.1	The bid security shall be in the form of any the following forms: The amount of not less than **PhP1,812,800.00**, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit.
18.2	The bid security shall be valid until **3 Aug 2020.**
20.3	The Bidder shall submit the Eligibility and Technical Documents arranged, numbered and tabbed. Each Bidder shall submit one (1) original and three (3) copies of the first and second components of its bid.
21	The address for submission of bids is: **Bids and Awards Committee** Polomolok Water District National Highway, Polomolok South Cotabato 9504 Telephone No.: 63-83-5008008 Facsimile No.: 63-83-5008008 Email Address: pol_wd@yahoo.com.ph Website address: polwaterdistrict.gov.ph The deadline for submission of bids is on **5 March 2020 at 10:00 a.m**
24.1	The BAC shall open the bids in public on **5 March 2020 at 10:00 a.m**. at: Polomolok Water District

	National Highway, Polomolok South Cotabato 9504 The time for the bid opening shall be the same as the deadline for receipt of bids or promptly thereafter. Rescheduling the date of the opening of bids shall not be considered except for force majeure, such as natural calamities. In re-scheduling the opening of bids, the BAC shall issue a Notice of Postponement to be posted at the PhilGEPS' and the Procuring Entity's websites.
24.2	During bid opening, if the first envelope lacks any of the documents listed in the ADB BDS 12.1, the bid shall be declared non-responsive but the documents shall be kept by the Procuring Entity. Only the unopened second envelope shall be returned to the Bidder.
24.3	The BAC shall immediately open the financial proposals in the second envelope of the responsive bids. The bid price shall be read and recorded.
27.4	ABC does not apply as ceiling for bid prices.
28.2	1. Latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS) 2. PhilGEPS Certificate of Registration and Platinum Membership
31.4(f)	List of additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, (1) Construction schedule and S-curve (2) Manpower Schedule (3) Construction Methods (4) Equipment Utilization Schedule (5) Construction Safety and Health Program approved by the Department of Labor and Employment (6) PERT/CPM or other acceptable tools of project scheduling. (7) Materials and Equipment Details

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 dateof 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 filedagainst 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 fiftypercent (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.

153. 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.

154. 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.

155. 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.

156. 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) aforementioned, 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.

192. 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, tomobilize and start work or performance within the specified period in the Noticeto 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 ofarbitration 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 tenpercent (10%).

435. 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

Special Conditions of Contract

GCC Clause	
1.17	The **Intended Completion Date** is within (18) months from the start date of the project. *NOTE: The contract duration shall be reckoned from the start date and not from contract effectivity date.*
1.22	The **Procuring Entity** is Polomolok Water District, National Highway, Polomolok, South Cotabato.
1.23	The **Procuring Entity's Representative** is: **Engr. James Ecube** Polomolok Water District National highway, Polomolok, South Cotabato
1.24	The **Site** is located in Polomolok, South Cotabato and is defined in the following drawings: 1. Barangay Pagalungan – Drawing No. GA-1-1/23 2. Purok San Isidro, Poblacion – Drawing No. GA-1-1/24 3. National Highway (from Bgy. Pagalungan to Bgy. Glamang – Vicinity Map and Plan for the Proposed Installation of Steel Pipes and uPVC Pipes
1.28	The **Start Date** shall be the date of receipt of the Notice to Proceed: _____.
1.31	The **Works** consist of construction of pumping facilities, site development, pipelaying (11.4 kilometers transmission and distribution mains) and other related works.
2.2	Not applicable.
2.3(j)	Add the following as item j. j. Initial Environmental Examination, Environmental Management Plan, Resettlement Plan, Indigenous Peoples Plan; and Gender Action Plan.
5.1	The **Procuring Entity** shall give possession of all parts of the Site to the Contractor on the date of the issuance of the Notice to Proceed .
6.5	The Contractor shall employ the Key Personnel and designation required by the Procuring Entity as those in ITB 12.1(b)(ii.2) of the Bid Data Sheet: *NOTE: The names of the Key Personnel and their designation shall be filled out by winning contractor prior to contract signing.*

7.4(c)	No further instructions.
7.7	The Contractor shall be primarily and solely responsible for the acts, defaults, and negligence of any subcontractor.
8.1	No further instructions.
10	The Site Investigation Reports: Topographic Survey
12.3	In case the Contractor fails to comply with the preceding paragraph, the Procuring Entity shall forfeit its performance security. All payables of the GoP in the Contractor's favor shall be offset to recover the costs.
12.5	Warranty Period: **Fifteen (15) years.**
13	All partners to the joint venture shall be jointly and severally liable to the Procuring Entity – if the winning Contractor is a joint venture.
18.3 (h) (i)	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: corrupt, fraudulent, collusive, coercive, abusive, and obstructive practices, conflict of interest and other integrity violations as defined in ITB Clause 3.1(a)."
21.2	The Arbiter is: Construction Industry Arbitration Commission (CIAC), 2F Executive Center Building, 369 Sen. Gil J. Puyat Avenue corner Makati Avenue, Makati City, M.M.
29.1	No day works are applicable to the contract.
31.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within thirty (30) calendar days of delivery of the Notice of Award.
31.3	The period between Program of Work updates is **ninety (90) calendar days**. The amount to be withheld for late submission of an updated Program of Work is **P30,000.00.**
34.3	The Funding Source is from LWUA and funds for this contract will come from ADB Loan No. 3389-PHI.
39.1	The amount of the advance payment is **fifteen percent (15%) of the Contract Price** to be paid in lump sum or at the most two, upon the submission of request and acceptance by the Procuring Entity of an advance payment security as described in GCC Clause 39.2.
40.1	Materials and equipment delivered on the site but not completely put in place shall be included for payment.

40.3	If the Procuring Entity delays payment, the Contractor shall be paid interest on such payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the average annual rate of **seven percent (7%).**
51.1	The date by which operating and maintenance manuals are required upon completion of the project/issuance of certificate of project completion. The date by which "as built" drawings are required is upon completion of the project.
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 **P50,000.00**.
52	Add the following as additional Clause 52. "**52. Industrial or Intellectual Property Rights** The Contractor represents and warrants that the Works (including without limitation all computer hardware, software and systems, whether separately procured or incorporated within other goods and services procured) do not violate or infringe any industrial property or intellectual property right or claim of any third party. The Contractor shall indemnify and hold the Procuring Entity harmless against and from any claim which arises out of or in relation to the matters referred to above."
53	Add the following as additional Clause 53. "**53. Safeguards** The Contractor shall: (a) comply with the measures relevant to the contractor set forth in the Initial Environmental Examination (IEE), the Environmental Management Plan (EMP), Resettlement Plan (RP) and the Indigenous Peoples Plan (IPP), attached hereto as Annexes 1 and 3 respectively (to the extent the concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; and, (c) provide the Procuring Entity with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Contract that were not considered in the IEE, the EMP, RP or the IPP; and, (d) fully reinstate pathways, other local infrastructure to at least their pre-project condition upon the completion of construction."
54	Add the following as additional Clause 54.

	"**54. Labor** The Contractor shall (i) prioritize employment of women and the poor to at least the percentages of the labor force as set out in the GAP; (ii) provide equal pay for equal work, regardless of gender, age, ethnicity or any other factors; (iii) provide the timely payment of wages; (iv) maximize the employment of local people who meet the job and efficiency requirements for Subproject construction, operation and maintenance and in that regard, not discriminate against people based on age, provided they are capable of performing the work; (v) advertise labor requirements in a timely manner prior to recruitment, in a venue that can reasonably be expected to be seen by interested men and women, regardless of age or ethnicity; (vi) provide workers with a written contract; (vii) provide such workers with adequate on-the-job training and safety training; (viii) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment; (ix) not employ child labor; and (x) maintain records of labor employment (including the name, ethnicity, age, gender, working time and payment of wages) and ensure that such records are included in summary form in the project performance management system."
55	Add the following as additional Clause 55. **"55. Gender and Development** The Contractor shall comply with the measures set forth in the GAP and allocate adequate resources to fund the implementation of the GAP."
56	Add the following as additional Clause 56. "**56. Reportorial Requirements** The Contractor shall provide the Procuring Entity with quarterly reports of its activities, including each of its obligations in Sub-Clauses 53, 54 and 55.
57	Add the following as additional Clause 57. "**57. Respectful Work Environment** The Contractor shall ensure that its employees and sub-contractors observe the highest ethical standards and refrain from any form of bullying, discrimination, misconduct and harassment, including sexual harassment and shall, at all times, behave in a manner that creates an environment free of unethical behavior, bullying, misconduct and harassment, including sexual harassment. The Contractor shall take appropriate action against any employees or sub-contractors, including suspension or termination of employment or

	sub-contract, if any form of unethical or inappropriate behavior is identified. The Contractor shall conduct training programs for its employees and sub-contractors to raise awareness on and prevent any form of bullying, discrimination, misconduct and harassment including sexual harassment, and to promote a respectful work environment. The Contractor shall keep an up to date record of its employees and subcontractors who have attended and completed such training programs and provide such records to the Procuring Entity or the Procuring Entity's authorized representative at their first written request."

Section VI. Specifications

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I. Scope of Work

The work items included in the approved Program of Work are pipelaying of approximately 11,415 linear meters of sizes ranging from 150 mm to 350 mm pipes, fittings and appurtenances; construction of two (2) pumping facilities complete pumphouse structure and perimeter fencing, supply, installation, testing and commissioning of submersible pump and motor, power generator set, discharge line and its appurtenances, transformers, cables and accessories; powerline extension and treatment facilities.

A. Transmission and Distribution Mains

A total of 9,765 linear meters of transmission main, spiral welded steel pipes, A139 Grade SS-400 B&S cement lined-cement coated (CLCC) and a total of 1,650 linear meters of distribution main, unplasticized polyvinyl chloride (uPVC) pipes, Series 8, including appurtenances will be installed as well as pipe crossings and interconnection. The cost for transmission and distribution pipelines will cover the supply of pipes and fittings, excavation, backfilling, compaction, pipe disinfection, pavement demolition and restoration.

B. Pump house Structure and Site Development

The Contractor shall construct a 3.4m X 2.5m pump house, 3.0m x 3.5m genset housing structure complete including walls and flooring finishes, roofing and tinsmithry, doors-windows-glazings, carpentry and joinery, chlorine room, electrical/lighting system, drain system, painting and coating, 1.0 meter wide concrete catwalk all around pump house structure, etc. in accordance with the layout shown in the Drawings.

The Contractor shall also construct a 20m X 27m concrete hollow blocks perimeter fencing including gates for vehicle and pedestrian, painting and coating, perimeter lighting, etc. in accordance with the layout shown in the Drawings.

C. Electro-Mechanical Equipment

The Contractor shall supply and install the following:

a. Magalong Pumping Station (PS # 10)

1-10"Ø, **45.0** LPS @ 130m TDH, SS 316, coupled to **100** Hp, 460 V, 3-Phase, 8"Ø submersible motor, electrical controls, cable and column pipe; **200**KVA diesel power generator set; discharge line, valves, fittings, full-bore digital flow meter, butterfly valves and other civil works; distribution, cables and accessories.

b. Mabacquiao Pumping Station (PS #11)

1- 10"Ø, **30.0** LPS @ 75m TDH, SS 316, coupled to **50** Hp, 460 V, 3 Phase, 60 Hz, 6"Ø submersible motor, electrical controls, cable and column pipe; **125** KVA diesel power generator set; discharge line, valves, fittings, full-bore

digital flow meter, butterfly valves and other civil works; distribution, cables and accessories.

II. LWUA Standard Specifications

The revised "***LWUA Standard Specifications for Water System Construction***" (formerly Volume 2 of 2 of the Bidding Documents) shall be part of the Technical Specifications.

Any conflict or discrepancies between the herein ***Section VI – Technical Specifications*** of the Bidding Documents and the "*LWUA Standard Specifications for Water System Construction*", the herein ***Section VI – Technical Specifications*** **shall govern** over the "*LWUA Standard Specifications for Water System Construction."*

1.0 ENGINEER-OWNER-CONTRACTOR RELATIONS

1.01 ENGINEER'S/PolWD Representative AUTHORITY

a. The Engineer, acting as the authorized representative of the Polomolok water District, will decide such questions which may arise as to the quality and acceptability of materials and equipment furnished, work performed, rate of progress of the work, interpretation of the Specifications and Drawings, and those relating to the acceptability in fulfilment of the contract of the Contractor. The Engineer shall thereafter, transmit such reports or recommendations to Polomolok Water District Administration for confirmation and/or modification within ten (10) days from rendition thereof. Unless otherwise modified/amended or revoked by Administration within ten (10) days from receipt of Engineer's written advice, such instruction, order or decision of the Engineer shall be final and binding upon the Contractor, subject however, to the conditions of Section for Protests.

b. Any difference which may arise between different contractors under the Engineer's surveillance shall be arbitrated by the latter; however, the Engineer shall not arbitrate disputes between the contractors and subcontractors.

c. The Engineer will, subject to verification and/or approval by the Administration, certify the estimates of the value of the work completed and materials utilized in accordance with the conditions set forth in Division 10 (Progress and Payments).

2.0 PROTESTS

If the Contractor considers any work demanded of him to be outside the requirements of the contract, or if he considers any order, instruction, or decision of the Engineer or of any inspector to be unfair, he shall immediately upon receipt of such order, instruction, or decision, ask for a written confirmation of the same, whereupon he shall proceed without delay to perform the work or to conform to the order, instruction or decision; thereafter, unless the Contractor finds such order,

instruction, or decision as indicated in the said written confirmation satisfactory, he shall, within ten (10) days after receipt of the same, file a written protest with the Engineer, stating clearly and in detail his objections and the reasons thereof. Except for such protests or objections as are made of record in the manner specified and within the time stated therein, the Contractor hereby waives all grounds for protests or objections to the orders, instructions, or decisions of the Engineer and hereby agrees that, as to all matters not included in such protest, the orders, instructions and decisions of the Engineer shall be considered final and binding. All orders, instructions and decisions of the Engineer will be limited to matters properly falling within the Engineer's authority as specified herein (Engineer's Authority).

The Engineer shall resolve the protest within the fifteen (15) days from its filing. If the protest is adversely decided by the Engineer, the Contractor may elevate his protest to the PolWD Administration within ten (10) days from receipt of the Engineer's decision, otherwise, the decision of the Engineer shall be considered final and binding. The PolWD Administration shall, within thirty (30) days from receipt of the protest, give written notice of its decision to the Contractor.

Save as hereafter provided, each decision in respect of every matter so referred shall be final and binding upon the Contractor until the completion of work, and shall forthwith be given effect by the Contractor with all due diligence, whether or not the Contractor requires arbitration as provided in herein (Arbitration). If the PolWD Administration has given notice of its decision to the Contractor and no claim to arbitration has been communicated to the Administration by the Contractor within ten (10) days from receipt of such notice, the said decision shall remain final and binding upon the Contractor. If the PolWD Administration shall fail to give notice of its decision as aforesaid within a period of thirty (30) days after receipt of protest or if the Contractor be dissatisfied with any such decision, then and in any such case the Contractor may within ten (10) days after the expiration of the aforesaid period of thirty (30) days (as the case may be) require that the matter or matters in dispute be referred to arbitration as provided herein below.

Where, however, the PolWD Administration issues instructions, orders or renders a decision in its own initiative, any protest or objection thereto shall be file directly with the PolWD Administration, and shall be governed by, and resolved in accordance with the procedures herein above provided.

3.0 ARBITRATION

Subject to the provisions of on Protest, all questions still in dispute under the contract may be submitted for arbitration at the option of either party upon written demand to the other party. When formal arbitration is requested, a Board of Arbitrators shall be formed in the following manner: The Owner and the Contractor shall each appoint one member of his Board, and these members shall appoint a third member who shall act as Chairman. If either party fails to appoint its arbitrator within fifteen (15) days from notice or if the appointed members fail to agree upon the third member within forty-five (45) days from notice of arbitration, either party may petition the judge of the proper court in the Municipality of Polomolok,

Philippines, to make the appointments which have not been made as contemplated above. No one with a financial interest in the subject under arbitration will be permitted to serve the Board. This Board may engage experts to act in an advisory capacity. Minutes shall be kept of all meetings and signed by all members of this Board. Decisions of the Board shall require only a simple majority and all interested parties shall be informed thereof. Expenses of the Board shall be initially paid by the party requesting the arbitration, and the manner of payments shall be set forth in an agreement before the proceedings of the Board. However, should the Board finally uphold the claim of the party requesting arbitration, all expenses of the Board shall be paid/reimbursed in accordance with the Board resolution. The decision of the Board shall be binding on both parties.

4.0 RESIDENT ENGINEER'S OFFICE/PolWD Representative

The Contractor shall provide separate, temporary offices for use by the Resident Engineer/PolWD Representative, and others as described by the Owner. The number of offices, size and furnishing shall be specified In the Special Provisions.

5.0 CONTRACTOR'S EMPLOYEES

The employees of the Contractor are not employees of the Polomolok Water District. Hence, PolWD shall not be liable or responsible for any personal injury or damage including death caused by any of the employees of the Contractor during the lawful performance of their duties. The Contractor shall, at all times stand solely liable and /or responsible for the enforcement of and compliance with all existing laws, rules and regulations applicable and the Contractor hereby agrees and binds itself to save and hold the Polomolok Water District free and harmless from any or all liabilities in respect thereto and/or arising therefrom.

6.0 CONTRACTOR'S PROJECT MANAGER

A qualified PROJECT MANAGER, acceptable to the Engineer/PolWD Representative, shall direct the work and shall provide competent supervision of the work until its completion. The project manager shall have full authority to act in behalf of the Contractor, and all directions given by the Engineer / PolWD Representative to the foremen in-charge of the particular work of particular work to which the instructions apply. Such instructions given to a foreman shall likewise be considered given to the Contractor. Such instructions given by the Engineer/ PolWD representative to the project manager or to a foreman, when the concern items of substantial importance, will be confirmed in writing. All instructions and directions given by the Engineer/ PolWD representative will be limited to matters properly falling within the Engineer's authority as specified herein.

Whenever required by existing Philippine laws, the Contractor shall employ the services of a licensed Sanitary Engineer, Civil Engineer, Electrical Engineer and Mechanical Engineer to direct and supervise all relevant engineering work in accordance with the provisions of the law.

7.0 INSPECTION AND TESTING

a. All materials furnished and all work performed under the contract shall be subject to inspection by the Engineer/ PolWD Representative. The Contractor shall be held strictly to the true intent of the Specifications and Drawings in regard to quality of materials, workmanship and diligent execution of the contract. Such inspection includes mill, plant, shop, or field inspection as required. The Engineer shall be permitted access to all parts of the work, including plants where materials or equipment are manufactured or fabricated, and he shall be furnished with such materials, information and assistance by the Contractor, his subcontractors and suppliers to make a complete and detailed inspection.

b. Work done in the absence of prescribed may be required to be removed and replaced under the proper inspection, and the entire cost of removal and replacement, including the cost of all materials shall be borne by the Contractor, regardless of whether the work removed is found to be defective or not. Work covered up without the authority of the Engineer/ PolWD Representative, shall, upon order of the Engineer/ PolWD Representative, be uncovered to the extent required, and the Contractor shall similarly bear the entire cost of performing all the work and furnishing all materials necessary for the removal of the covering and its subsequent replacement, as directed and approved by the Engineer/ PolWD Representative.

c. The cost of carrying out normal inspections and test such as factory tests for material and equipment to be delivered under the Contract and tests for all materials and equipment after installation when installation is part of the Contract should be at the Contractor's or Sub-Contractor's expense under their normal contractual obligations.

d. The Engineer/PolWD Representative will make, or have made, such normal tests as he deems necessary to insure that the work is being accomplished in accordance with the requirements of the Contract the cost of such testing will be borne by the Contractor. In the event such tests reveal non-compliance with the requirements of the Contract, the Contractor shall bear the cost of such corrective measures deemed necessary by the Engineer/PolWD Representative, as well as the cost of subsequent retesting.

e. For locally manufactured materials and equipment, the Contractor shall require his Supplier to submit in writing to the PolWD schedule /s of production at least five (5) working days prior to start thereof.

8.0 ASSIGNMENT FORBIDDEN

a. The Contractor shall not assign, sublet, sell, transfer, or otherwise dispose of the contract or any portion thereof, or his rights, title, or interest therein, or his obligations thereunder, without the prior written approval of the PolWD

b. If the Contractor violates the provisions of the preceding subsection, the Contract may be terminated at the option of the PolWD. In such event, the PolWD shall be relieved of all liabilities and obligations to the Contractor, and to his assignee or transferee, growing out of such termination.

9.0 RIGHT OF WAY

a. Lands or right-of-way for the work to be constructed under the Contract will be provided by the PolWD as shown on the Drawings. Nothing contained in the Specifications or Drawings shall be interpreted as giving the Contractor exclusive occupancy of lands or right-of-way provided.

b. Except as may otherwise be provided, the Contractor shall secure, from the agencies having jurisdiction, the necessary permits to create obstructions, to make excavations as required under the Contract, and to otherwise encroach upon rights-of-way, and present evidence to the Engineer that such permission, has been granted before work is commenced. Regulations and requirements of all agencies concerned shall be strictly adhered to in the performance of this Contract, including the furnishing of insurance and bonds required by such agencies. The enforcement of such requirements under this Contract shall not be made the basis for claims for additional compensation.

c. The Contractor shall not do any work that will affect any oil, gas, sewer, or water pipeline, any telephone, telegraph, or electric transmission line, fence, or any other structure, nor enter upon the rights-of-way involved until notified by the Engineer that the PolWD has secured authority thereof from the proper party. After authority has been obtained, the Contractor shall give said party due notice of his intention to begin work, and shall give said party convenient access and every facility for removing, shoring, supporting or otherwise protecting such pipeline, transmission line, ditch, fence, or structure, and for replacing the same. The Contractor shall not be entitled to extension of time or extra compensation on account of any postponement, interference, or delay caused by any such pipeline, transmission line, fence, or structure being on line of the work.

10.0 CONSTRUCTION INTEFERENCES

a. As used in this Section, the following words are defined as follows: “utility” shall be understood to include tracks, overhead or underground wires, cables, pipelines, conduits, ducts, sewers or storm drains; the term “service connection” shall be understood to mean all or any portion of a pipeline (including sewer house laterals), conduit, wire, cable or duct, including meter, between a utility distribution line and an individual customer, or customers when served by a single service connection; and the term “construction interference” shall be understood to include any utility or service connection within the limits of excavation or over-excavation required for the work the Contract as shown or as ordered by the Engineer, or any utility or service

connection located in the space which will be required by any of the work under the Contract.

b. In the event that any utility or service connection is required to be disturbed or removed to permit construction of a pipeline or other structure under the Contract, each disturbance or removal shall be done only with the approval of the Engineer/ PolWD Representative, and following notification to the owner of the interfering utility or service connection. Any such utility or service connection removed or otherwise disturbed shall be reconstructed as promptly as possible in its original or other authorized location in a condition at least as good as prior to such removal or disturbance, subject to the inspection of the owner of the same at any stage of the work. For this purpose, the Contractor shall be required, upon completion of that particular phase of the work affecting said utility or connection to present to the PolWD a certificate from the owner of the utility or connection to the effect that the utility or connection removed or otherwise disturbed has been restored in an acceptable condition. The Contractor's responsibility under this Section to remove or replace shall even in the event such damage or destruction occurs after backfilling or is not discovered until after completion of backfilling. The Owner of the utility or service connection shall be notified immediately after damage or destruction occurs or is discovered.

c. During the performance of the work under this Contract, the owner of any utility affected by the work shall have the right to enter when necessary upon any portion of the work for the purpose of maintaining services and of making changes in or repairs to said utility.

d. The Drawings show the approximate positions of known utilities and sewer house laterals in the immediate vicinity of the work, but the PolWD does not guarantee that all existing utilities and sewer house laterals are shown, or shown in their correct location. Service connections, except for sewer house laterals, normally are not shown on the Drawings. The Contractor, before commencing any excavation, shall ascertain from records or otherwise, the existence, horizontal and vertical position, and ownership of all existing utilities and service connections. If the Contractor discovers any utility or sewer house lateral in the line of the work which is not shown on the Drawings, he shall immediately notify the Engineer of the existence of the same. The PolWD shall not be liable for any consequences arising as a result of a service connection being incorrectly located in the field by the agency having jurisdiction over said service connection.

e. All costs involved in removing, relocating, protecting, supporting, repairing, maintaining or replacing a utility which actually constitutes a construction interference, when said utility is shown on the Drawings as an interference, however approximate the location shown may be, shall be borne by the Contractor.

g. All costs, involved in removing, relocating, protecting, supporting, repairing, maintaining or replacing a service connection larger than 50 mm (2-in) in nominal diameter which actually constitutes a construction interference, when said service connection is shown on the Drawings as an interference, however, approximate the location shown may be, shall be borne by the Contractor.

h. All costs involved in removing, relocating, protecting, supporting, repairing, maintaining or replacing a service connection 50 mm (2-in) or smaller in nominal diameter which actually constitutes a construction interference, whether or not said service connection is shown on the Drawings, shall be borne by the Contractor.

11.0 CONSTRUCTION STAKES AND REFERENCE MARKS

The Contractor shall set construction stakes establishing lines, slopes and center line and bench marks for pipe work, culvert work, utility lines, structures and other appurtenances, as may be necessary and will furnish the Engineer with all necessary equipment and men for checking lines, slopes, and grades. These stakes and marks shall constitute the field control in accordance with which the Contractor shall execute the work.

The Contractor shall furnish, free of charge, all additional stakes, templates, batter boards, and other materials and supplies necessary for marking and maintaining points and lines established, and shall furnish the Engineer/PolWD Representative such labor as may be reasonably required in establishing points and lines to the satisfactory prosecution of the work. The Contractor shall be held responsible for the preservation of all stakes and marks.

In cases involving any changes in stakeout, the Contractor shall cooperate with the Engineer and facilitate the prompt re-establishment of the field control for the altered or adjusted work.

12.0 LOCAL LABOR AND LABOR-INTENSIVE METHODS

Pursuant to the provisions of Batas Pambansa Blg. 13 (Infrastructure Act for 1979) entitled "An Act Appropriating Funds for Public Works and Highways Projects and For Other Purposes," the Contractor, in the prosecution of the contract, shall give preference to the use of available skilled and unskilled labor in the locality. Before the Contractor can procure unskilled labor from outside the sitio, barangay, poblacion, municipality or city where the project is located a certification to the effect that said labor is not available thereat shall be secured from the Barangay Captain, Municipal or City Mayor, provided that for skilled and specialized skilled labor, procurement may be made from within and outside the province where the project is located, respectively.

Whenever technically practicable and economically feasible, labor intensive methods should be given preference especially in the excavation and laying of pipelines.

13.0 PERMITS

All construction permits, inspection fees if necessary, licenses and taxes due to the national or local government necessary for the implementation of the works shall be processed, secured and paid for by the contractor who shall solemnly be responsible in case of delays.

14.0 PIPING

14.01 GENERAL

a. The Contractor shall furnish and install all pipe, fittings, closure pieces, supports, bolts, nuts, gaskets, jointing materials, and appurtenances as shown and specified, and as required for a complete and workable piping system.

c. All exposed piping shall be adequately supported with devices of appropriate design. Where details are shown, the supports shall conform thereto and shall be placed as indicated; provided that support for all piping shall be complete and adequate regardless of whether or not supporting devices are specifically shown.

d. All pipes shall be laid in a uniform profile as shown on the drawings.

15.0 MORTAR LINED AND ENAMEL OR MORTAR COATED STEEL PIPE

15.01 General

Mortar lined and enamel or mortar coated steel pipe materials and method of manufacture of straight pipe and pipe specials shall conform to the standard specifications (ASTM A-139) for electric-fusion (ARC)-Welded Steel Pipe (NPS 4 and Over) intended for conveying potable water supply.

15.02 Cement

Cement shall conform to ASTM C-150 and shall be Type 1 for Pipe linings and coatings.

15.03 Aggregate

Fine aggregate conforming to ASTM C33.

15.04 Mortar

The Cement Mortar used for the lining and coating composed of mixtures of Portland cement, aggregate and water, well-mixed and of the proper consistency to

produce dense, homogeneous lining and coating that will adhere firmly to the steel cylinder (AWWA C205). The Cement mortar shall develop compressive strength of not less than 31MPa (4500 psi) at 28 days (Test specification reference: ASTM C39/ C39M-1)

15.05 Cylindrical Material

Cylinders shall be fabricated from hot-rolled carbon steel sheets or plates conforming to ASTM A-570 Grades C,D or E, ASTM A-283 Grade D; steel pipe conforming to ASTM A-139 Grade B; or, if approved by purchasing agency, high strength low-alloy steel conforming to ASTM A-572 Grade 42. The steel shall be made by one or more of the following processes: open-hearth, basic-oxygen, or electric-furnace. Steel may be cast in ingots or may be strand cast. When steels of different grades are sequentially strand cast, identification of the resultant transition material is required. The producer shall remove the transition material by any established procedure that positively separates the grades. The longitudinal edges of the steel shall be shaped to give the most satisfactory results by the particular welding process employed. The weld shall be made by automatic means (except tack welds if used) and shall be of reasonably uniform width and height for the entire length of the pipe. All weld seams made in manufacturing pipe shall be made using complete joint penetration groove welds.

15.06 Chemical Composition

The steel shall conform to the chemical requirements prescribed in section 5, Table 1 of the chemical requirements of ASTM 139 and the chemical analysis shall be in accordance with Test Methods, Practices, and Terminology A 751.

15.07 Tensile Requirements for the Steel

1. Longitudinal tension test specimens taken from the steel shall conform to the requirements as to tensile properties prescribed in section 7 Table 2 of the tensile requirements of ASTM 139. At the manufacturer's option, the tension test specimen for sizes 85⁄8 in. (219.1 mm) in outside diameter and larger may be taken transversely.

2. The yield point shall be determined by the drop of the beam, by the halt in the gage of the testing machine, by the use of dividers, or by other approved methods. The yield strength corresponding to a permanent offset of 0.2 % of the gage length of the specimen, or to a total extension of 0.5 % of the gage length under load shall be determined.

15.08 Tensile Requirements of Production Welds

Reduced-section tension test specimens taken perpendicularly across the weld in the pipe, with the weld reinforcement removed, shall show a tensile strength not

less than 95 % of the minimum specified in Section 7 of ASTM 139, the tensile requirements for steel. At the manufacturer's option, the test may be made without removing the weld reinforcement, in which case the tensile strength shall be not less than that specified in Tensile requirements for steel specified in Section 7 of ASTM 139.

15.09 Lining

The mortar shall conform to AWWA C205 for Centrifugally spun cement mortar pipe lining and shall consist of one part cement to not more three parts sand by weight. The cement mortar lining shall be applied by the centrifugal method or by method obtaining equivalent results. The process used in the application of the lining shall produce smooth, dense durable surface free from pockets, voids, over-sanded areas, blisters, and excessively cracked areas. Except where otherwise specified or shown, lining thickness shall be as follows, with a tolerance of plus or minus twenty-five percent (25%):

Nominal Pipe Thickness	**Lining**
Diameter mm (in.)	mm (in.)
Under 300 (12)	6 (1/4)
300 (12) to 400 (16)	13 (1/2)
Over 400 (16)	19 (3/4)

15.10 Coating

General

The coating steel pipe shall be of coal tar enamel, red lead primed or cement mortar or as specified herein.

15.11 Coal Tar Enamel Coating

The pipe smaller than 450 mm (18 in.) diameter shall be factory-coated with coal tar enamel and bonded asbestos felt wrap as specified in Section 3 of "AWWA Standard for Coal-Tar Protective Coatings and Linings for Steel Water Pipelines-Enamel and Tape Hot Applied" (AWWA C-203). Pipe 450mm (18 in.) diameter and larger, shall be factory coated with coal-tar enamel, fibrous glass mat and bonded asbestos felt wrap as specified in Section A1.5 of said AWWA Standard. Coating materials and methods of application shall conform to said AWWA Standard.

15.12 Cement Mortar Coating

Cement mortar coating shall conform to AWWA C205. The steel reinforcement in the mortar coating shall consist of: (a) Helically wound cold drawn steel wire or, (b) a cage of self-furring welded steel wire fabric of 50mm x 50mm No. 14 gauge fabric of 50mm x 100mm No. 13 gage fabric, or (c) 25mm No. 18 gage or 37mm

hexagonal No. 17 gage ribbon mesh, twisted wire fabric, savaged both edges using steel wire. Helically wound steel wire shall not be less than the thickness of No. 14 gage and shall be embedded at the approximate center of the cement mortar coating.

Mortar for pipe coating shall consist of one (1) part cement and not less than three (3) parts sand by weight. Coating thickness shall be 25 mm (1 in.) minimum except as specified.

15.13 Curing

The pipe shall be water or steam cured, or combination of both, or the coating may be cured by covering with plastic membrane. Water curing and steam curing may be used interchangeably on the time ratio basis of four (4) hours water curing and one (1) hour steam curing.

15.14 Compressive Strength for Mortar

Test cylinders shall be cast samples of the mortar used in lining and coating the pipe. The curing of test cylinders shall be in conformity with the curing of the pipe. Cylinders shall be molded and tested in accordance with **ASTM C39**.

15.15 Hydrostatic Pressure Test

All steel cylinders shall be subjected to hydrostatic pressure test which stresses the steel to a min of 172.36MPa or as computed using the equation below.

Each length of pipe shall be tested by the manufacturer to a hydrostatic pressure that will produce in the pipe wall a stress of not less than 60 % of the minimum specified yield point at room temperature. The pressure shall be determined by the following equation:

$$P = 2St/D \quad (2)$$

where:

P = hydrostatic test pressure, psi (not to exceed 2800 psi)

(19.3 MPa) in any case) (Note 8),

S = 0.60 times the minimum specified yield point of the grade of steel used in pounds per square inch,

t = specified wall thickness, in. and

D = specified outside diameter, in.

Test pressure shall be held for not less than 5 s, or for a longer time as agreed upon between the purchaser and the manufacturer.

NOTE 7—a hydrostatic sizing operation is not to be considered a hydrostatic test or a substitute for it.

NOTE 8—when the diameter and wall thickness of pipe are such that the capacity limits of testing equipment are exceeded by these requirements, the test pressures may be reduced by agreement between the purchaser and the manufacturer

NOTE 9—When agreed upon by the purchaser and the manufacturer and so stated on the order, pipe may be tested:

(1) To 1-1⁄2 times the specified working pressure, except that the maximum test pressure shall not exceed 2800 psi (19.31 MPa) nor shall the maximum fiber stress exceed 85 % of specified minimum yield point of the grade of steel used.

(2) To a fiber stress which does not exceed 85 % of the specified minimum yield point of the grade of steel used or exceed 2800-psi test pressure.

15.16 Cleanliness of Pipe

The interior of each pipe section and special shall be clean and free of foreign materials when they are delivered.

16.0 TRANSPORT AND HANDLING

16.01 General

Coal tar enamel and cement mortar coated steel pipe shall be transported and handled as specified herein. Any pipe section that becomes damaged as a result of improper transporting, handling or stockpiling shall be repaired or replaced depending on the recommendation of the End User.

16.02 Epoxy Enamel Coated Steel Pipe

Transporting and handling of enamel coated pipe shall conform to the requirements of AWWA Standard C-203. After enamel coated pipe has been delivered, any damaged areas in the enamel coating shall be field-repaired using Epoxy enamel or the section of pipe replaced as specified.

16.03 Cement Mortar Coated Steel Pipe

Pipe shall be lifted by means of a padded fork lift or by belt slings in such a manner as to minimize bending of the pipe section and prevent damage to the coating. When being transported, pipe shall be supported in a manner that will prevent distortion or damage to the lining of coating. Damaged pipe shall be repaired or replaced as specified.

16.04 Markings

Each section of pipe shall be marked with the manufacturer's distinguishing marking, the specification number, the grade of pipe, and other marking if required and agreed upon between the purchaser and the manufacturer.

a. Manufacturers name and or Trademark

b. Nominal diameter (mm) x thickness (mm) x effective length (m)

c. Standard Specification number and grade of pipe

16.05 Ends

1. Pipe shall be furnished with plain right-angle cut or beveled ends as specified. All burrs at the ends of pipe shall be removed.

2. When pipe is specified to have the ends prepared for field welding of circumferential joints, the ends shall be beveled on the outside to an angle of 35°, measured from a line drawn perpendicular to the axis of the pipe, with a tolerance of 62⁄2° and with a width of root face (or flat at the end of the pipe) of 1⁄16 6 1⁄32 in. (1.6 6 0.8 mm). Unless otherwise specified, the outside circumference of pipe ends for a distance of not less than 4 in. (101.6 mm) shall not vary more than 660 % of the nominal wall thickness of the pipe from the nominal outsider circumference based on the diameter specified, except that the tolerance shall be not less than 63⁄16 in. (9.5 mm).

3. Pipe ends for use with mechanical couplings shall have tolerances within the limits required by the manufacturer of the type of coupling to be used.

4. Upon agreement between the purchaser and the manufacturer, the ends of the pipe may be sized within agreed-upon tolerances, if necessary to meet the requirements of special installations.

16.06 Production Test Specimens and Methods of Testing

1. The test specimens and the tests required by these specifications shall conform to those described in Test Methods and Definitions A 370.

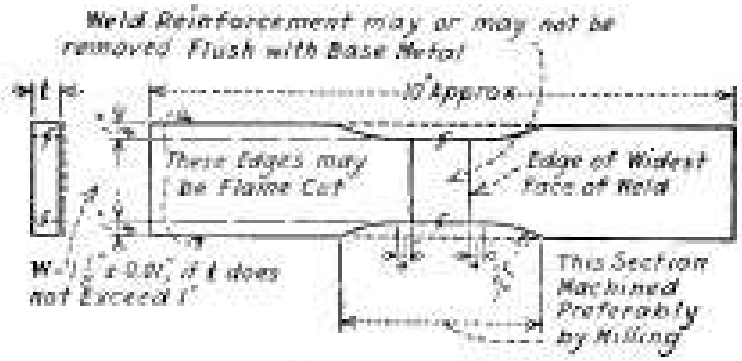
2. The longitudinal tension tests specimen of the steel shall be taken from the end of the pipe in accordance with Fig. 4, or by agreement between the purchaser and the manufacturer, or may be taken from the skelp or plate, at a point which will be approximately 90° of arc from the weld in the finished pipe.

3. If the tension test specimen is taken transversely, the specimen shall be taken in accordance with Fig. 5.

4. The specimens for the reduced-section tension test of production welds shall be taken perpendicularly across the weld at the end of the pipe. The test specimens shall have the weld approximately in the middle of the specimen. The specimens shall be straightened and tested at room temperature.

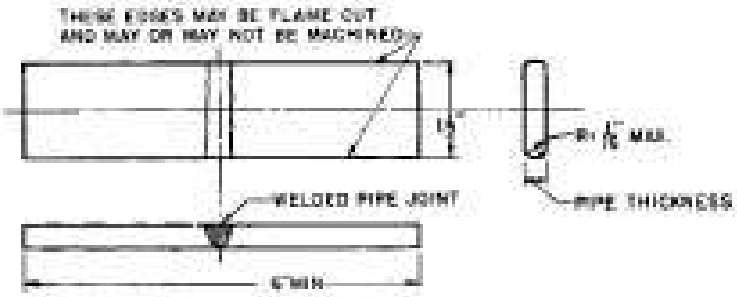
5. Reduced-section tension test specimens shall be prepared in accordance Section 7 of ASTM 139.

Figure 1



Metric Equivalents				
in.	0.01	¼	1½	10
mm	0.3	6.4	38.1	254

FIG. 1 Reduced-Section Tension Test Specimen



Metric Equivalents			
in.	1/16	1½	6
mm	1.6	38.1	152.4

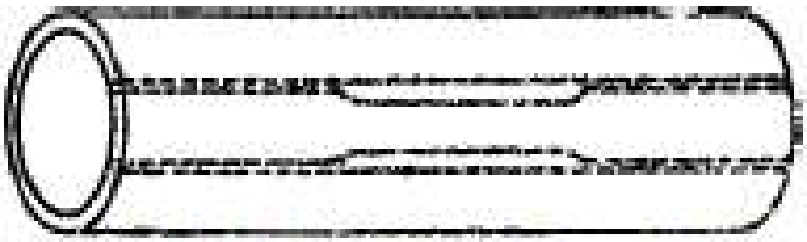


FIG. 4 Location from Which Longitudinal Tension Test Specimens Are To Be Cut from Large Diameter Tubing

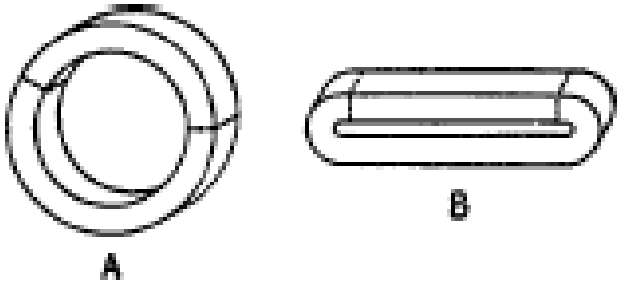


FIG. 5 Location of Transverse Tension Test Specimen in Ring Cut from Tubular Steel Products

16.07 Inspection and Testing

1. The inspector representing the purchaser shall have entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works that concern the manufacture of the material ordered. The manufacturer shall afford the inspector all reasonable facilities to satisfy him that the material is being furnished in accordance with this specification. All tests and inspection shall be made at the place of manufacture prior to shipment and, unless otherwise specified, shall be so conducted as not to interfere unnecessarily with the operation of the works. If agreed upon, the manufacturer shall notify the purchaser in time so that he may have his inspector present to witness any part of the manufacture or tests that may be desired.

2. *Certification*—Upon request of the purchaser in the contract or order, a manufacturer's certification that the material was manufactured and tested in accordance with this specification together with a report of the chemical and tensile tests shall be furnished.

3. The Pre-delivery inspection of the various steel shall be at the premises of the supplier/Manufacturer locally with a reasonable facilities and assistance including access to drawings and production data which shall be furnished at the inspectors at no charge to the procuring entity.

4. The inspectorate team composed of Three (3) from PolWD as representative shall witness all test specified in ASTM A139 for Steel, lining and coating of the various steel pipes to be delivered.

16.08 Rejection

1. Each length of pipe received from the manufacturer may be inspected by the purchaser and, if it does not meet the requirements of this specification based on the inspection and test method as outlined in the specification, the length may be rejected and the manufacturer shall be notified. Disposition ofrejected pipe shall be a matter of agreement between the manufacturer and the purchaser.

2. Pipe found in fabrication or in installation to be unsuitable for the intended use, under the scope and requirements of this specification, may be set aside and the manufacturer notified. Such pipe shall be subject to mutual investigation as to the nature and severity of the deficiency and the forming or installation, or both, conditions involved. Disposition shall be a matter for agreement.

17.0 STEEL WELDING FITTINGS SHALL CONFORM TO ASTM A-234.

17.01 Ends for Mechanical-Type Couplings

Except as otherwise provided herein, where mechanical-type couplings are indicated, the ends of the pipe shall be banded with Type C collared ends using double fillet welds. Where pipe 300 mm (12 in.) and smaller is furnished in standard schedule thickness, and where the wall thickness equals or exceeds the coupling manufacturer's minimum wall thickness, the pipe ends may be grooved.

17.02 Welding Personnel

Welding personnel shall be skilled and possess of at least NCII license with COSH Certificate. The welder should have at least five (5) years of experience in welding transmission steel pipes for potable water supply. Skilled welding personnel shall undergo work welding on site test which shall be evaluated by the PolWD – PIU head and shall conform to the requirements as specified in theplan for the issuance of certificate of compliance.

17.03 Flanges

Where the design pressure is 1.2 MPa (175 psi) or less, flanges shall conform to either AWWA C-207 Class D or E, or ANSI B16.5 1.0 MPa (300 psi) class. Flanges shall have flat or raised faces. Flanges shall be attached with bolt holes straddling the vertical axis of the pipe.

18.0 PRESSURE REGULATING VALVES (PRV), GATE VALVES, WYES STRAINERS AND AIR RELEASE VALVES (ARV)

18.01 GATE VALVES w/ COMBINATION FLANGES AND BUTTERFLY VALVES WITH STEEL RING FLANGES

General

Valves are classified as exposed and buried. For buried gate valves it shall be installed to a specified depth and shall be provided with the required 150mm uPVC pipe conduit with the required concrete pad and valve box cover, valve stem shall be provided for gate valves buried more than 1.50 meter depth.

Gate Valve Description	Nominal Diameter	Class
100mm (4") Gate Valve with Combination Flanges	DN 100	PN-16
150mm (6") Gate Valve with Combination Flanges	DN 150	PN-16
200mm (8") Gate Valve with Combination Flanges	DN 200	PN-16
300mm (12") Butterfly Valves with steel ring Flanges	DN 300	PN-20
350mm (14") Butterfly Valves with steel ring Flanges	DN 350	PN-16

Ductile Iron Gate Valves
All valves shall conform to the " Standard for Resilient Seated Gate Valves to EN 1074-1 and 2 / EN 12266Standard flange drilling to EN 1092-2 (ISO 7005-2)
Use: For Drinking Water and neutral liquids (Max 70°C)
Body and Bonnet: Ductile Iron
Coating: minimum of 250 microns Electro statically applied epoxy coated (Internal & External) to DIN 30677-2 and GSK approved (Supplier/ manufacturer must have a GSK Approved Certificate)
Color: Blue
Stem: (Non-rising) Stainless Steel
Steam Sealing: Non-rising Stem with a minimum of Triple safety stem sealing with an NBR wiper ring, a polyamide bearing with four NBR O-rings, and an EPDM rubber manchette
Steam Seal Nut: Dezincification Resistant Brass; Triple safety stem sealing system

Wedge: Fully Vulcanized with WRAS (Water Regulatory Advisory Scheme) Approved EPDM rubber compound. It should feature outstanding durability due to the ability of the rubber to regain its original shape - Double bonded vulcanized process and sturdy wedge design. Should come with guide rails with wedge shoes to ensure low friction and smooth operation; Fixed Integral wedge nut that prevents vibration and ensures durability
Thrust collar: Dezincification resistant brass
Bonnet Bolts: Stainless Steel
Bonnet Gasket: EPDM (Ethylene Propylene Diene Monomer) M-Class Rubber
Bolt & Nut: Hot Dip Galvanized (Flange Type bolt and nut)
Body Markings: (Modeled or Engraved) Date Manufacture, Trade Name & Size
Operating Nut: 2 inches square with a cast iron showing the direction in which the nut is to be turned to open the valve. Valves shall be constructed to permit the replacement of the "o" rings above the collar under full working pressure with the valves in the full open position.
Warranty Period: 10 years (Shall carry a 10 year warranty, and clearly indicated on the certificate)
Combination Flanges
Flanges : Ductile Iron
Coating : minimum of 250 microns Electro statically applied epoxy coated (Internal & External)to DIN 30677-2 and **GSK approved** (Supplier/ manufacturer must have a GSK Approved Certificate)
Sealing Ring : EPDM Rubber (WRAS Approved)
Bolt & Nut : bolt & nut: bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153
Color : Blue
Warranty Period : 10 years

Ductile Iron Butterfly Valves
All valves shall conform to the " Standard for Resilient Seated Gate Valves to EN 1074-1 and 2 / EN 12266Standard flange drilling to EN 1092-2 (ISO 7005-2)
Use: For Drinking Water and neutral liquids (Max 70°C)
Body and Bonnet: Ductile Iron
Coating: minimum of 250 microns Electro statically applied epoxy coated (Internal & External) to DIN 30677-2 and GSK approved (Supplier/ manufacturer must have a GSK Approved Certificate)
Color: Blue
Stem: (Non-rising) Stainless Steel
Steam Sealing: Non-rising Stem with a minimum of Triple safety stem sealing with an NBR wiper ring, a polyamide bearing with four NBR O-rings, and an EPDM rubber manchette
Steam Seal Nut: Dezincification Resistant Brass; Triple safety stem sealing system
Wedge: Fully Vulcanized with WRAS (Water Regulatory Advisory Scheme) Approved EPDM rubber compound. It should feature outstanding durability du to the ability of the rubber to regain its original shape - Double bonded vulcanized process and sturdy wedge design. Should come with guide rails with wedge shoes to ensure low friction and smooth operation; Fixed Integral wedge nut that prevents vibration and ensures durability
Thrust collar: Dezincification resistant brass
Bonnet Bolts: Stainless Steel
Bonnet Gasket: EPDM (Ethylene Propylene Diene Monomer) M-Class Rubber
Bolt & Nut: : bolt & nut (Flange Type): bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153

Body Markings: (Modeled or Engraved) Date Manufacture, Trade Name & Size
Operating Nut: 2 inches square with a cast iron showing the direction in which the nut is to be turned to open the valve. Valves shall be constructed to permit the replacement of the "o" rings above the collar under full working pressure with the valves in the full open position.
Warranty Period: 10 years (Shall carry a 10 year warranty, and clearly indicated on the certificate)
Steel Ring Flanges
Flanges : Ductile Iron
Coating : minimum of 250 microns Electro statically applied epoxy coated (Internal & External)to DIN 30677-2 and **GSK approved** (Supplier/ manufacturer must have a GSK Approved Certificate)
Sealing Ring : EPDM Rubber (WRAS Approved)
Bolt & Nut : bolt & nut: bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153
Color : Blue
Warranty Period : 10 years

18.02 MECHANICAL FLOWMETER WITH PULSER

MECHANICAL FLOWMETER SPECIFICATIONS	
1)	Woltman cold water meter w/ steel flanges which conform to ISO EN7005
2)	Removable element structure, easy installation and maintenance, detachable without removing the meter from pipeline
3)	Dry dial, magnetic drive sensitive action, small pressure loss
4)	Vacuum sealed register ensures the dial keep from fog and keep the reading clear in a long term service.

5)	Selected high quality materials for steady and reliable characteristic
6)	Technical data conform to international standard ISO 4064.
7)	Working conditions
	a) water temperature: 0.1 ℃ - 40 ℃
	b) water pressure: ≤ 1.6 MPa
8)	MAKE
	a) screw for sealing: stainless steel
	b) lead seal bolt: stainless steel
	c) adjusting nut: brass
	d) flange cover: Ductile iron
	e) O-ring: silicon rubber
	f) bush: brass
	g) gasket: synthetic rubber
	h) body: ductile
	i) transmission shaft: stainless steel
	j) turbine shaft hold: brass
	k) turbine shaft: tungsten steel
	l) bolt & nut: bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153
	m) Flange Gasket – EPDM Rubber
PULSER SPECIFICATIONS	
1)	photo electric direct reading for cold and hot meter
2)	the reading error can be reduced to zero using photoelectric direct reading technology
3)	designed with low power consumption and no power supply is required
OTHER REQUIREMENTS	
1)	Provide brochures
2)	1-year warranty

COMBINATION AIR RELEASE & VACUUM BREAK VALVES	
Type	Combination type
Body	Ductile Iron
Seat	Rubber
Pin	Stainless steel
Bonnet	Ductile Iron
Small nozzle	Stainless steel
Hex Bolt	Stainless steel
Washer	Stainless steel
O-Ring	Rubber
Support Plate	Stainless steel
Hex Bolt	Stainless steel
Float	Stainless steel
Warranty	1 YEAR WARRANTY
OTHER REQUIREMENTS	
1)	PROVIDE BROCHURES

Y-STRAINER SPECIFICATIONS	
1)	body: ductile iron
2)	perforated stainless strainer gauge #16
3)	body form: y-pattern
4)	connections: flange ends
5)	PN 16
6)	epoxy coated
7)	bolt & nut: bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153
8)	color: blue

COMBI-FLANGE SPECIFICATIONS	
1)	body: ductile iron
2)	epoxy coated
3)	sealing ring: EPDM rubber
4)	bolt & nut: bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153
5)	color: blue
OTHER REQUIREMENTS	
1)	PROVIDE BROCHURES
2)	1 YEAR WARRANTY

19.0 INSTALLATION OF PIPES

19.01 General

Unless otherwise provided, the Contractor shall furnish and install all pipes, specials, fittings, closure pieces, valves, supports, bolts, nuts, gaskets, jointing materials and all other appurtenances as shown and as required to provide a complete and workable installation. Where pipe support details are shown, the supports shall conform thereto and shall be placed as indicated; provided, that the support for all exposed piping shall be complete and adequate regardless of whether or not supporting devices are specifically shown. Concrete thrusts blocks, anchor blocks or welded joints shall be provided at all junctions, changes in all direction exceeding 11-1/2 degrees or where otherwise shown. At all times when the work of installing pipe is not in progress, all openings into the pipe and the ends of the pipe in trenches or structures shall be keep tightly closed to prevent entrance of animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source , shall assume full responsibility for any damage due to this cause and shall at his own expense restore and replace the pipe to its specified condition and grade if it is displaced due to floating. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Owner.

19.02 Laying

Trenches shall be in a reasonable dry condition when the pipe is laid. Necessary facilities including slings shall be provided for lowering and properly placing the pipe section in the trench without damage. The pipe sections shall be laid to the line and grade when shown and they shall be closely jointed to form a smooth flow line. Immediately before placing each section of pipe in final position for jointing, the bedding for the pipe shall be checked for firmness and uniformity of surface.

19.03 Field-Welded Joints

Field welding of pipe joints shall conform to the requirements of the "AWWA Standards for Field Welding of Steel Pipe Joints" (AWWA C-206). Prior to welding, such joints shall be inspected and approved by the Engineer / PolWD Representative before any protective coating is placed around the outside of the joint.

19.04 Protective Coatings

With pipe smaller than 450 mm (18 in.) in diameter, before the spigot is inserted into the bell, the bell shall be daubed with mortar containing one (1) part cement to three (3) parts sand. The spigot end then shall be forced to the bottom of the bell and excess mortar on the inside of the joint shall be swabbed out. With pipe 450 mm (18 in.) in diameter and larger, joints shall be pointed on the inside with mortar as specified for field joints in AWWA Standard C-205 after the backfill has been placed. After coated pipe sections have been joined, the coating shall be made continuous across the joints forming a coating equivalent to the factory-applied coating of adjacent pipe sections.

After the pipe sections on cement mortar coated pipe have been joined, but before backfilling has been completed, the outside annular space between pipe sections shall be completely filled with grout. The grout shall be poured in such a manner that all exposed portions of metal joints shall be completely protected with cement mortar. Grout shall consist of one (1) part cement to three (3) parts sand, by weight and shall be sufficiently fluid to permit it to be poured into the joint space. Exterior field joints shall be coated with cement mortar, retained by suitable forms, so as to bridge the joint. The mortar shall be compacted within the form to produce dense coating without voids. The joint coating shall be kept moist until the backfill is placed.

19.05 Butt-straps

Where a butt-strap is used, both the interior and exterior surfaces of the butt-strap shall be given a coating equivalent to the factory-applied coating of the adjoining pipe sections. Mortar coating shall be reinforced with wire mesh. The mortar lining shall be reinforced with wire mesh where the exposed length of the butt-strap, as measured between the ends of the connected pipe section, exceeds 100 mm (4 in.). Butt-straps used as closure pieces shall be provided with hand holes for repair of the lining.

20.0 UPVC (UNPLASTIZED POLYVINYL CHLORIDE) PIPE

Pipe shall conform to the requirements on the standards for Unplasticized Polyvinyl Chloride (uPVC) "Pressure Pipes", and shall comply with ISO 1452, the pipe shall, however, have the following dimensions for the indicated:

Nominal Pipe Size Inside Diameter (mm)	Nominal Outside Diameter (mm)	Effective Length (m)	Wall Thickness (t) (mm) Series 8 minimum	Gasket type
200	225	6.0	13.40	Integrated fixed seal
150	160	6.0	9.50	Integrated fixed seal

Test parameters shall be on the following (See Table 1):

Nominal Outside Diameter	Medium Level M			High Level L		
	Mass of falling weight (Kg)	Fall height (m)	Impact energy *ab* (Nm)	Mass of falling weight (Kg)	Fall height (m)	Impact energy *ab* (Nm)
225	2.5	1.8	44	5, 0	1.8	88
160	1, 6	2, 0	31	3, 2	2, 0	63

20.01 Taking of Samples:

Shall be randomly selected by the PolWD personnel from the pipes intended for delivery and will be subjected to the following test;

1. Materials, appearance and dimensions

2. Chemical /Mechanical Test

   a) **QUICK BURST PRESSURE** – The One (1) meter pipe sample shall withstand the applied pressure for at least 60 seconds without failure. The value for the applied pressure for the pressure test is 4.56 MPa for Series 8 Upvc pipes at 28ºC.

   b) **SHORT TERM PRESSURE** – The pipe shall withstand the applied pressure for at least One (1) hour without failure. The value for the applied pressure test will be 5.2 MPa for Series 8 uPVC Pipes.

   c) **FLATTENING** – The pipe shall no show evidence of splitting, cracking and breaking when flattened to a minimum of 40% of its outside diameter.

   d) **IMPACT TEST** – Pipes with nominal wall thickness of 14.9mm or less, if tested for resistance to external blows at 0°C shall have a true impact rate (TIR) of not more than 10% when tested at the levels given.

e) **Dichloromethane** – Cut Specimen shall be submerged in Dichloromethane for 30 minutes; No attack at any part of the surface of the specimen at bath temperature of 150±1°C.

f) **SHRINKAGE** – Cut specimen will be subjected to oven test with 150 °C for a period of One (1) hour allowable shrinkage shall only be 5%

g) **FIXED INTEGRATED GASKET**- type joints shall be used for all pipes sizes and shall be tested Using short term pressure – random sample shall be taken (1 meter strip) composed of a pipe with a hub (0.50m) and pipe nipple (0.50m) joined together with a standard elastomeric sealing ring and shall be subjected to a pressure load for at least 1 (One) hour without leak, the value of the pressure load test shall be 4.30 mpa for series 8 at 28º.

h) **RESISTANCE TO INTERNAL PRESSURE** –Pipe shall withstand, without bursting or leakage, the hydrostatic stress induced by internal hydrostatic pressure when tested in accordance with ISO 1167-1 and ISO 1167-2, using the test conditions specified in table 7 below. The manufacturer shall Conduct test and furnish copy of the electronic result of their standard batch testing intended for the procuring Entity's delivery, in compliance with ISO 1452, The 20 ° and 60° Centigrade temperature at Circumferential stress of 42 MPa and 12.5 MPa for 1 hour period and 1000 hrs straight respectively to extrapolate theUPVC life and guarantee its 50 years life, result should be certified by the manufacturer to be furnished.

Table 7 — Pressure test requirements for pipes

Characteristic	Requirement	Test parameters					Test method
		Temp. °C	Circumferential stress MPa	Time h	Type of test	Number of test pieces[a]	
Short- and long-term strength	No failure during the test	20	42,0	1	Water in water	3	ISO 1167-1 and ISO 1167-2
		60	12,5[b]	1 000			

[a] The number of test pieces given indicates the number required to establish a value for the characteristic described in the table. The number of test pieces required for factory production control and process control should be listed in the manufacturer's quality plan.

[b] If tested with the circumferential stress of 12,5 MPa, due to statistical spread of the test results, test times less than 1 000 h can be achieved. In this case, a retest procedure with a circumferential stress of 12,5 MPa or 10,0 MPa shall be performed with pipes of the same production batch and double sampling. If the retest results are positive, the requirement of the minimum reference curve for PVC-U 250, given in ISO 1452-1:2009, 4.4.2, is deemed to be verified.

PROPERTY	STANDARD REQUIREMENT		TEST METHOD
Vicat Softening Temperature	Minimum ≥80°C		ISO 2507 unplasticized polyvinyl Chloride (uPVC) pipes and fittings -Vicat Softening Temperatures
Longitudinal Reversion	Wall thickness ≤8mm	5% maximum after 1 hour at 150°C	ISO 2505 Thermoplastics Pipes – Longitudinal Reversion
	Wall Thickness >8mm	5% maximum after 2 hour at 150°C	
Water Absorption	Maximum of 40 g/m²		ISO 2508 Unplasticized Polyvinyl Chloride (uPVC) pipes and fittings -water Absorption- Determination and specification
Resistance to Dichloromethane at specific temp (Degree of gelation)	No attack at any part of the surface of the test piece (30 minutes); 1 test piece ; Temp of bath=(150±1)°C		ISO 9852 Unplasticized Polyvinyl Chloride (uPVC) pipes and fittings
Resistance to Sulfuric Acid	Mass of specimen shall not increase by more than 0.316g nor decrease by more than 0.013g		ISO 3473 Unplasticized Polyvinyl Chloride (uPVC) pipes – Effect of Sulfuric Acid – Requirement and test method
Hydrostatic Pressure	Burst Pressure	The pipe shall withstand 4.56 MPa for at least 60 seconds without failure	ISO 1167-1 and ISO 1167-2 Thermoplastic Pipes, Fittings and Assemblies for the conveyance of fluids –

PROPERTY	STANDARD REQUIREMENT		TEST METHOD
	Short term Pressure	The pipe shall withstand 5.20 MPa for at least 1 hour without failure	determination of resistance to Internal Pressure
Resistance to External Blows (Impact test)	True Impact test (TIR) shall not exceed 10% where TIR =Total number of breaks / Total number of Blows		ISO 3127 Thermoplastic Pipes – determination of resistance to External Blows – round the clock Method
Flattening	No evidence of splitting, cracking or breaking when flattened to 40% of the outside diameter		ASTM D2241 Standard Specification for Polyvinyl Chloride (PVC) Pressure Rated Pipe (SDR Series)

The inspectorate team composed of Two (2) personnel may reject any goods or any part thereof that fail to pass any test and /or inspection or do not conform to the specifications. The supplier/Manufacturer shall rectify or replace such rejected goods or parts thereof or make alterations necessary to meet the specifications at no cost to the procuring Entity and shall repeat the test and / or inspection to ensure compliance with the Procuring Entity's Requirements.

21.0 SLEEVE-TYPE COUPLINGS

Sleeve-type couplings shall be provided as shown on plans. Couplings shall be of Ductile Iron (D.I.) with Hot dip galvanized bolts as specified below.

SLEEVE TYPE COUPLING
Coupling : Ductile Iron
Gasket : EPDM Rubber
Flange : Ductile Iron
Type : Sleeve Type
Bolt & Nut : bolts & nuts are low carbon steel in compliance with ASTM 307 grade b & ASTM a-563 respectively, Hot Dip Galvanized Iron in accordance with ASTM A-153

Shop Drawings shall be submitted for evaluation		
Color : Black / Blue		
Coating: Epoxy Coated (Internal and external in Accordance to AWWA 550)		
Warranty Period : 1 year		
Sleeve Diameter (mm)	**Min. No. of Bolt & Size (mm)**	**Minimum Coupling Length (mm)**
50(2")	4-10mm	138
75 (3")	4-12mm	138
100(4")	4-12mm	138
150(6")	4-12mm	154
200(8")	6-16mm	178
250(10")	6-16mm	178
GALVANIZED IRON PIPES		
Materials composition : Shall conform with the requirements of the "specifications for Black and		
hot-dipped Zinc- Coated (Galvanized) welded and seamless steel pipe for ordinary uses (ASTM A-120)		
Thickness : Heavy Gauge ASTM Standard		
: For 2"Ø GIP min. weight/m = 5.44kg/m; Thickness: 3.19mm; Outside Dia.=60.325mm		
: For 3"Ø GIP min. weight/m = 11.29kg/m; Thickness: 5.49mm; Outside Dia.=88.90mm		
: For 8"Ø GIP min. weight/m = 42.647kg/m; Thickness: 8.2mm; Outside Dia.=219.10mm		
Color : zinc (Smooth galvanized finished) coating not less than 550g/sqm		
Effective Length : 6m (20 ft)		
Body markings : Size & Manufactures Trade Mark		

22.0 GASKET AND BOLTS

a. Except as otherwise provided, gaskets for flanged joints shall be Hot dip Galvanized.

b. Wherever blind flanges are shown, the gaskets shall consist of 3 mm (1/8 in) thick cloth-inserted rubber sheet which shall be cemented to the surface of the blind flange.

23.0 PRESSURE GUAGES

Pressure gages shall have 89 mm (3-1/2 in) dials, 6 mm (1/4 in) threaded connections and shut-off cocks. Gauges shall be oil filled and calibrated to read 1.38MPa (200 psi) pressure gauges must be DOST calibration certificate and provide the original certification to the PolWD Engineer, unless otherwise shown on the Drawings. The pressure element of the gage shall be protected against excessive pulsations and surges by an external pressure snubber.

24.0 RCP CASING FOR HIGHWAY CROSSING

The Contractor shall furnish and install Reinforced Concrete Pipe casing as shown on the Drawings. Reinforced Concrete Pipe casings must be installed properly on exact location, diameter and thickness as shown on plans. Concrete Collar shall be provided as to connect each RCP pipe so as to become a protective casing for the 350mm (CLCCSP) Concrete Lined Concrete Coated Steel Pipe. 1000mm ø RCP Casings shall be installed as required in accordance with details as shown, and subject to the approval of the agency having jurisdiction.

25.0 WARNING TAPE

a. Material

The Contractor shall be furnish for each pipe above or equal to 75 mm an Alu-foil tape (minimum width is 4 cm) with the mention “Attention Water Main.”

b. Installation

The warning tape shall be laid into the trench between two backfill layers at 30 cm above the pipe.

26.0 PIPELINE INSTALLATION

Pipelines shall be installed with at least minimum of specialized installation equipment and knowledge of correct methods and procedures. The following are general guidelines to follow.

26.01 EXCAVATION

Preparation:

1. Advance written notice should be given to the government agencies concerned, affected driveways of households and other establishments for information.

2. Excavation permits, if necessary should have been secured from the government agencies that have jurisdiction over the project.

3. Always refer to the detailed plan for the correct field location, alignment, trench and bedding specifications before mobilization and excavation begins.
4. Make sure that all the necessary bollards, barricades and warning devices or whatever is needed are properly placed to protect the safety of the construction crew and the public.

5. Alignment of pipeline trench should always be between the property and the existing pipelines or within Three (3) Meters away from the property line.

6. If the proposed location of the trench is below the asphalt or concrete pavement, concrete cutter should be used in breaking asphalt or concrete pavements.

7. Asphalt and concrete cutting and breaking should be implemented in advance prior to the schedule to the schedule of the excavation and pipe laying activities.

8. All asphalt and concrete debris should be hauled away immediately to avoid using them as backfill materials.

9. No trenching should be allowed to start and proceed without the required bollards, barricades and warning devices.

10. All pipelines, valves and fittings, construction materials, tools, equipment's, etc. must be prepared, ready and available. No Excavation for any section of the pipelines installation shall be performed until pipelines, valves and fittings, construction materials and all other materials necessary to complete the installation are on hand, Actual location of these pipes (Every 100ln.m), valves, Fittings and other appurtenance shall be tagged to get the exact coordinate (X, Y) including the actual elevation (depth) using a GPS Survey grade surveying equipment set to WGS 84.

26.02 TRENCH EXCAVATION

1. Unless otherwise shown or ordered, excavation for pipelines shall be open cut trenches. Trench should be straight, with vertical sides centered on the pipe centerline

2. Trench excavation should not extend too far ahead of pipe laying for safety reasons. The maximum amount of open trench permitted at any one time at one location shall be 300 meters, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater.

3. Barricades and warning lights shall be provided and maintained for all trenches left open overnight, except at intersections and driveways in which case of heavy steel plates adequately braced bridges or other type of crossing capable of supporting vehicular traffic shall be furnished as directed by the Engineer. Or, do not leave open trenches overnight at all. An open trench presents a danger to the construction.

4. The trench width should not be more than 0.30 to 0.90 meter greater than the outside diameter of the pipe.

5. The trench walls may have to be "sloping" when the soil is not stable.

6. For curve alignments, the trench width should be greater than the usual to accommodate the permissible deflection of the joints.

7. Trench bottom must be uniform, free from humps, abrupt change of direction hard objects, large object /or sharp stones, and tree roots.

8. Trenches shall be over-excavated beyond the desired depth only when ordered by the Engineer such over excavation be to the depth ordered. The trench shall then be refilled to the grade of the bottom of the pipe with sand until the pipe is covered with the specified thickness and then with selected granular materials obtained from the excavation.

9. In unstable ground, during over-excavation, the trench walls may be shored or sloped.

10. Except where trees are shown on the drawings to be removed, trees shall be protected from injury during construction operations and no tree is to be removed without written permission or permit if necessary. Tree roots can be trimmed and cut if it is an obstruction only with the permission of the Engineer.

11. Water must be kept out of the trench during construction so that the pipe will not become contaminated. Dewatering pumps should be used in the trench if necessary, to remove any building up of water.

26.03 SAND BEDDING AND SAND FILL MATERIALS

General

The purpose of this standard is to specify minimum requirements for sand used for bedding and sand fill in pipe trenches, which is fit for this purpose and will ensure install adequate support and will achieve their design life.

To the satisfaction of the PolWD representative, the sand shall be free from:

1. Cohesive and organic lumps
2. Rocks or other sharp particles likely to damage pipes or protective coatings,
3. Weeds or other vegetative or their seeds.

The sand shall comply with the criteria detailed in the Table below of this Technical Standard.

Test	Description / Sieve Size (mm)	Criteria / Percent Passing
Practical Size Distribution	9.5	100
	6.7	95-100
	4.75	90-100
	2.36	75-100
	1.18	40-100
	0.600	20-95
	0.300	10-55
	0.150	0-55
	0.0075	0-10

When requested by the PolWD Representative, a 25 kg sample of packing sand shall be submitted and sent for testing to any government accredited laboratory and witnessed by the PolWD representative.

Each Sample shall be clearly marked with the following information:

1. Test Standard and type of material
2. Contract number
3. Name of Contractor
4. Origin of supply

All relevant test results or certificates shall be submitted to PolWD Representative immediately they become available.

Application

1. The trench bottom must be properly leveled and free from large and/or sharp stones and objects so that the full length of the pipe will have continuous, firm support.

2. Sand bedding should be spread over the trench bottom to the full width of the trench with the thickness of 150mm.

3. Compacted sand shall also serve as a backfill material to the both sides of the pipelines and 150mm. above the outside diameter of the pipe. Also refer to the "Trench Excavation detail".

26.04 PIPE HANDLING

FOR UPVC PIPES

1. If possible, pipe materials should be loaded/unloaded using some form of mechanical lifting equipment. Whatever method used should prevent abuse and damage to the pipe materials.

2. In handling the pipes, no hooks, chains, or similar metal devices should contact the pipe at any failure points.

3. ln smaller sizes of pipes, it can be loaded / unloaded by two or more people carrying at both ends or with persons at the middle.

4. Pipes should never be dragged along the ground or road.

5. All pipes, fittings ad gasket materials should be kept as clean as possible and be protected from any contamination.

6. Pipes should be unloaded as near to the trench as possible to where they are to be used, so as to avoid excessive handling.

7. The pipe should be laid on the side opposite the excavated material or equipment, or, if trench is not yet opened, opposite where these will be positioned.

8. Pipes should be secured against rolling into the trench and kept safe from traffic and heavy equipment.

9. The bell end of the pipe should be placed towards the direction of the work, as during the installation the spigot end will enter the bell end of the previously laid section.

11. Lifting equipment should be used to lower larger pipes; for which a webbing sling should be attached to the pipe.

26.05 PIPE LAYING FOR UPVC PIPES

1. After the trench bottom has been prepared and the l50mm. Thickness of sand bedding has been placed, the pipe may be set in place.

2. Pipes should be free from damaged. Any unsatisfactory sections should be rejected.

3. The inside of each pipe length should be clean. Any dint, oil, grease, animals and other foreign materials should be removed.

4. The proper procedure in joining of pipe varies somewhat with the type of pipe:

26.06 FOR UPVC PIPES (UNPLASTIZED POLYETHYLENE CHLORIDE)

1. Clean the bell of all dirt or foreign material that could interfere with the proper seating of the fixed gasket or integrated gasket.

2. Examine the interior of pipe for any soil or debris which, if found, shall be removed by brushing scrapping or rinsing.

3. Clear then apply approved lubricant to the tapered end of the pipe.

4. Align the pipe spigot and the taper end of the other pipe to the reference mark.

5. Align the spigot and bell, then push the spigot all the way into the bell until the reference mark is flush with the end of the bell. This mark should never exceed 9mm from the end of the bell after jointing.

6. When making field cuts, it is best to use pipe cutter to assure the uniformity of the cut, but a conventional wood saw or hacksaw maybe used to cut the pipe.

7. Field cut end needs to be beveled. Use a steel pipe to bevel the pipe and be sure to copy the factory bevel angle of 15 degrees. Also, add a guide mark on each pipe joint end.

8. During the lowering of uPVC pipes, one man should supply pressure against the unjointed end of the string to insure that none of the pipe slip back from the seating.

9. After lowering examine the guide mark on each joint of the pipelines to ensure that it has not move more than 9mm from the original setting.

26.07 STEEL PIPES (SURFACE PAINTED/CEMENT COATED/ CEMENT LINED)

1. Always check lining and coating for damage. Repair the large cracks and/or loose mortar in coating. Small cracks in the lining are less a concern as they will heal after introduction of water.

2. Look at pipe ends and body of pipe for damage that may have occurred during the transportation and handling. Badly damaged sections have to be discarded while others shall be repaired.

3. The interior of each pipe section shall be clean and free from foreign materials at all times especially during the pipe laying activity.

4. Pipes larger than 600mm shall assemble at the trench, pipes smaller than 600mm shall be assemble at the above the trench and shall be lowered using a chain hoist or by the appropriate mechanical equipment.

5. Welded joints are either lap joint or butt strap joint.

6. Lap joints and butt strap joints may be welded from the outside of the pipe or from the inside if the diameter is large enough.

7. Pipe spigot and bell joint shall not be hammered to connect and lessen the distance to conduct weld. Weld shall be three (3) passes and shall conform with the specifications or as detailed in drawings.

8. The butt strap shall have a minimum plate thickness of 3.5 mm. provide a hand hole where the lining of the butt strap joint cannot be reach for welding by the crew or as instructed by the Engineer.

9. Inside joints of cement lined steel pipes shall be plastered with cement mortar.

10. For diameters smaller than 450mm, the shoulder of the bell is buttered with a stiff mortar containing 1 part cement and 3 parts sand prior to installing the next section of pipe.

11. Use a swabbing device, such as an inflated rubber ball wrapped in burlap, to wipe away the excess mortar, making a smooth, flush, inside joint. A wire is threaded through the pipe section to be laid and attached to the ball prior to joining the pipe. When the sections are joined, the spigot squeezes the mortar into position against the shoulder of the ball, and the swabbing device is pulled from the previously laid sections passing the joint.

12. For larger diameters than 450mm, the inside joint is hand pointed with the stiff mortar after the pipe is in place. The mortar shall contain 1 part cement and 2 parts sand, dry mixed and moistened with just sufficient water to permit caulking and troweling without crumbling.

13. The pipe shall not be put in service or be subjected into a hydraulic test until the mortar has cured a minimum of 24 hrs.

14. Exterior joint spaces are filled with a cement mortar grout consisting of 1 part cement to not more than 3 parts of sand mixed to a flowing consistency.

15. A diaper should be placed around the joint and fastened with metal strapping or similar material. The gout is poured into an opening at the top of the pipe. The grout poured down one side of the pipe will flow up the other; then the top of the pour can be covered with protective material.

16. Surface painted steel pipes shall be used in exposed environment such as eroded portion and bridge crossing, etc.

17. Outside joints of surface painted steel pipes shall be painted with galvanized iron primer and coated with Blue colored semi-gloss marine enamel paint as final paint.

18. Lower the pipe into the trench by using chain hoist or mechanical equipment if possible. In smaller diameter pipelines, pipes maybe lowered into the trench

by two people using ropes, one rope looped around near each end of the pipe. Do not roll the pipes into the trench from the top.

19. Larger pipe sizes are best handled with appropriate equipment. The pipe is usually supported by a sling in the middle of the pipe length when lowered by a machine. The sling must be removed once the pipe is inside the trench.

20. Make sure that the entire length of the pipe section is in contact with the ground.

21. Pipe lengths should never be deflected in the joints to any degree than that recommended by the manufacturer.

22. Always check the inside of the pipe. Do not leave open ends of installed pipes. It should be plugged and secured to prevent the entry of animals, dirt, trench water and any other foreign materials

27.0 INTERCONNECTION

1. No interconnection shall be done without the approval of the Polwd engineer, an interconnection permit shall be secured first.

2. Prepare all the necessary materials, fitting, tools, equipment, barricades, warning devices, etc.

3. Inspect the valves and fittings for conformance to shop drawings and materials.

4. Contractor must notify PolWD or the affected consumers in the area for low water supply or possible interruption of water supply.

5. Isolate the sections of the mainline by closing the nearest isolating valves if applicable
.
6. Open a hydrants /blow-off valves or tap to relieve line pressure.

7. Cut the interconnection portion of the pipe line. it is best to use pipe cutter, to assure uniformity of cut, but a conventional wood saw or hacksaw will suffice for uPVC pipes, for CLCCSP – Steel pipes the appropriate tools and equipment must be used.

8. Dewater the excavation.

9. Maneuver the fittings into the proper position after making sure that the pipe ends are properly cut.
10. Always check the alignment of all valves and fittings involved.

11. Make sure that the rubber gaskets re not damaged for uPVC pipes and for steel pipes alignment is important, clean and free from dust and other foreign materials.

12. Nut tightening should follow a definite sequence€. One "round md round" and the other is "crisscross". Either should be satisfactory.

13. Inspect pipe flange for warping. lf bolts are tightened against a warped flange, there is I danger of cracking the cast iron valve flange.
14. After all valves and flanges are joined and interconnected, subject it for a low pressure to check for leakage. Increase the pressure gradually.

15. If there are leaks at any joints, cut the Supply of water and repair it immediately.

16. Provide concrete trust blocks and anchors to prevent movement of fittings.

17. Let the concrete mixture dry and prepare the area for backfilling.

28.0 THRUST BLOCK, ANCHOR AND CONCRETE ENCASEMENTS

Pipe thrust blocks shall be installed located on strategic locations in the pipe system as shown on plans and instructed by the PolWD Project Engineer.

Pipe Trust Blocks - is a mass of concrete poured in place between the pipe fittings and undisturbed soil at the bottom or side of the pipe trench.

Pipe Thrust Anchors - is a mass of concrete with embedded steel strap rods to resist upward thrusts induced by pressure on pipes or fittings.

Concrete Encasement - is a mass of concrete with embedded steel strap rods to protect uPVC pipe from external trust and resist upward thrusts induced by external pressure or force.

28.01 INSTALLATION FOR THRUST BLOCKS, ANCHORS AND CONCRETE ENCASEMENT SHALL CONFORM TO THE STANDARD SET BY LWUA

1. Non-structural concrete (2,000 psi) should be placed between the fitting and the undisturbed bearing soil.

2. The concrete should be kept behind the bell of the fitting it should not be allowed to run over against the pipe or into the joint

3. The concrete should fill in completely around the fitting. The pipe or fitting should not be encased, as there should be allowance for slight movement due to temperature changes and pressure.

4. Thrust block are not needed at the welded flanged joints of steel pipes.

5. For concrete encasement the entire length of the pipe including the bell is permitted to be poured over by concrete with steel reinforcement as reflected in the detailed drawing.

29.0 BACKFILLING AND COMPACTION

1. Water, if present, must be removed first from the trench using a dewatering pump or other means before backfilling.

2. Backfill always follows pipe installation as closely as possible. This protects the pipe from falling sharp and big rocks, eliminates the possibility of the pipe getting lifted due to flooding of the open trench, and avoids the pipe shifting out of the line due to cave-ins.

3. All backfill materials for uPVC pies should be done gently and thoroughly, Steel pipes shall be backfilled as shown on plans and as instructed by the engineer.

4. The first layer of the backfill must always be clean granular material such as sand. Suitable soil can be used if recommended by the engineer.

5. The pipe must be covered evenly for at least 150mm thick from the pipe's surface. Manually compact the sad firmly to avoid d Damage or movement of pipe for uPVC.

6. The succeeding layers of backfill must be selected soil materials of large and or sharp stones and lumps.

7. The remainder of the trench should be filled in layers, 100mm to 150dm thick, with each layer being carefully and thoroughly compacted before the next layer is placed.

8. Use & tamping bar or any other approved mechanical equipment during compaction.

9. If trenches are in the road right of way or where there will be a sidewalk, the compacted backfill must meet the compaction requirements of the agency concerned or DPWH.

30.0 SURFACE RESTORATION

1. All damaged and disturbed area du€ to pipe laying activities must be restored to its original condition.

2. Damaged concrete/asphalt pavement restoration is strictly enforced upon the completion of the pipe laying and hydro testing activities.

3. All concrete pavement surfaces and all concrete base under an asphaltic mix surfaces to be restored shall be scored concrete cutting equipment into clean straight lines.

4. Clean the sides of the pavements removing foreign particles using clean tap water

5. The cases of damaged, adjacent pavements, the damaged area should be included in the surface restoration and inside the perimeter of the scored portion.

6. In the cases of damaged, removed or disturbed fences, post, street signs, surface structures, and other properties, whether through failure or deliberately to efficiently perform the repair works shall be replaced.

7. The prepared concrete mixture for the surface restoration should have a compressive strength of 3000 psi. A concrete mixture ratio of 1 part cement, 2 parts sand and 3 parts aggregate will produce a concrete mix of approximately 3000 psi.

8. The restored portion should have the same thickness or greater than the existing concrete/asphalt pavement.

9. When the concrete is slightly hardened, scrape it using s stick broom.

10. Secure the area using the barricades, warning devices and steel plates (if necessary) to protect the newly restored portion until the concrete reaches its maximum strength.

Barricades, warning devices and steel plates should be removed on the site three (3) to five (5) days, or as approved by the agency covering the area or DPWH.

31.0 PRESSURE AND LEAKAGE TESTING FOR UPVC

1. Inspection before testing - Pipe section must be partially backfill 0.45 m over pipe, to secure from movement, leaving only the joints open for usual visual inspections. All pipe ends must be copped and restrained to prevent movement. Make provisions to relieve trapped air from high points and pipe ends.
2. Visual inspection of leakages - Prior to any testing, the pipe section must be cleaned by flushing with a minimum flushing velocity of 0.80 m/s(2.5 feet per second).

   - *After filling apply a slight pressure of at least 20 psi and allow 48 hours for the line to settle and stabilize during the 48-hr period visually examine all exposed pipe joints, couplings, valves and fittings for possible leaks. Also during this period examine all thrust blocks especially at test ends for excessive movements duo to trust forces which developed.*

3. Pressure and leakage testing/inspection - Refer to the applicable specification all procedures as given or follow the specifications below.

   "As pet LWUA standards, the test shall consist of holding test pressure on each section of the line for a period of two (2) hours. The test pressure at the lowest point shall be 1.0 MPa (150 Psi) according to the class of pipe installed, Class 100 or Class 150 Upvc. Pressure recorder of pressure logger shall also be provided at all ends of the section tested. The water necessary to maintain the pressure shall be measured using a meter or any other satisfactory means. The

leakage shall be considered the amount of water entering the pipeline during the two (2) hr. test period"

***Formula: AL** (Allowable leakage) = 1.85 liters /mm (dia.) per*

[Length in km (day)]

"For all other types of pies except cast iron or ductile pipe, the allowable leakage should not exceed 1.85 liters/mm of pipe diameter/km/24hrs"

"Must ensure that all newly installed closure pipes shall be tested and pass the leak test by subjecting the joints (of Closure pipes) to a pressure of 50 psi for the period of five minutes and visually checking for leakages"

Leakage Testing for Steel Pipes

Leakage test shall be conducted to at least 150m – 300m length.
Welded joint shall not be covered during leak test.

32.0 FLUSHING AND DISINFECTION

1. Conduct flushing to make sure that the water main is clean before starting disinfection to remove any foreign materials that may interfere with the disinfection activity.

2. Flushing Should be done though a hydrant or blow-off.

3. Minimum flushing velocity is 0.8 r/s (2.5 &s) to attain proper flushing action, Take a record and include in the report on how much water must be used to flush different pipe sizes at residual pressure of28 m (40 psi).

4. Introduce Chlorine Solution. Determine pipeline capacity to determine amount of chlorine needed.

5. A chlorine solution of not more than fifty milligrams per liter (50 mg/l) is pumped at the beginning of a valve section of pipeline until full. Determine chlorine solution with the aid of "Chlorine Residual Test Kit."

6. The preferred application point is usually at one end of the pipe section through a stop inserted on top of the laid pipe.

7. The high points of pipe section be being disinfected should be properly vented.

8. At the opposite end of the pipe section, a Blow-off valve should be provided to bleed or drain water during the injection process.

33.0 RETENTION PERIOD OF CHLORINE SOLUTION

1. The average retention or contact period for 50 mg/liter Chlorine solution is 24 hours.

2. All pipeline valves and appurtenances should be operated to ensure that they are also disinfected.

3. During the 24-hour contact period, chlorinated water should not be allowed to flow into the potable water distribution system.

4. After a contact period of 24 hours, samples should be taken along the entire length of the pipe line and tested for chlorine residual. Residual chlorine shall not be less than 25 mg/L; otherwise the treatment procedure shall be repeated until satisfactory results are obtained.

5. Never discharge highly chlorinated water to the surrounding area to avoid possible damage to properties and persons.

34.0 DRAINING AND FINAL FLUSHING

1. Drain the Chlorine solution through the blow-off valve into a storm-sewer line.

2. Use clean water to flush the disinfected pipeline.

3. After flushing, the residual chlorine should be between 0.20 to 0.75 mg /l.

35.0 MAGALONG PUMP STATION (PS #10)

A. ELECTRICAL COMPONENTS

1		**GENERAL**
	a.	The Electrical works shall consist of furnishing all equipment, labor, materials, tools and all necessary wiring accessories for the proper completion and operation of the **Automated VFD motor controller with Automatic Transfer Switch (ATS) electrical system** as specified herein and as shown on the drawings.
	b.	The Drawings and Specifications are intended to provide only a broad outline of the required equipment and system of operation and may not include all details of design construction. Any item of work or material through not expressly shown on the Drawings or specified herein but is obviously necessary to obtain a usable installation shall be deemed included in the required works.

	c.	All system components shall be compatible with each other and suitable for 24-hours continuous operation.
	d.	As used in these Specifications, the word "Owner" refers to the Water District named in the Contract. The word "Engineer" refers to the individual or firm authorized by the Local Water Utilities Administration (LWUA), acting as the Owner's representative to oversee the execution of the Contract. The word "Contractor" refers to the party who entered into Contract with the Owner or LWUA.
	e.	Construction of Service Entrance Pedestal will be done by the Polomolok Water District, however, service wire and conduits will be provided and be installed by the Contractor.
	f.	Demolition and reconstruction of the Chlorine Room wall and pull out of the existing Motor Control will be done by the Polomolok Water District.
	g.	Capable pit and conduits will be provided by the contractor.
	h.	Pull out and reinstalled of existing discharge pipes and fittings will be done by the Contractor.
	i.	Electrical installation (i.e. conduits, enclosures, etc.) shall be protected from ants and other pests /insects entry.
2		**CODES, REGULATIONS, PERMITS AND FEES**
	a.	The works required herein shall be done in accordance with the latest edition of the Philippine Electrical Code (PEC), the regulations and requirements of power and telecommunications utilities as far as their permanent services are concerned, and the government ordinance enforced in the locality. In case of conflict with these specifications or the drawings, the preceding clause shall govern.
	b.	The contractor shall be responsible for securing all necessary permits from the pertinent government authorities, at his expense, both for the construction and for the operation of the system upon completion of the work. The Contractor shall furnish the Owner with the approved Certificate of Final Electrical Completion.
3		**MATERIAL STANDARDS**
	a.	All materials, components, and equipment to be supplied and/or installed shall be of recent manufacturer, brand new (at most, three (3) years ex-stock) unused and suitable for intended operation. They shall conform with the U.S. Underwriters Laboratory (U/L) Standard for Safety, ASA, NEMA and

		ASTM in every case where such standards have been established; or with any other International Standard acceptable to the Engineer. Motor control specifications shall conform with the approved electrical plans (i.e. Enclosures).
	b.	All materials and components shall be as specified unless specifically exempted; in which case, they shall be the best of their respective kind.
	c.	Sample of materials to be supplied shall be submitted for approval when required by the Engineer.
	d.	All electrical equipment and materials shall bear the manufacturer's inspection label, unless exception to this requirement is inherent to a particular.
4		**SHOP DRAWINGS AND CATALOG DATA**
	a.	The Contractor shall submit to the Engineer for approval seven (7) copies of shop drawings of equipment and control components he intends to supply, as are indicated in the drawings and specifications.
	b.	Shop drawings shall provide sufficient information to evaluate the stability and compliance of the proposed equipment and control components with the plans and specifications.
	c.	Catalog data shall be also be submitted to supplement the shop drawings. Catalog cuts, bulletins, brochures or the like, or photocopies of applicable pages thereof shall be submitted where drawings for certain items are not required to be submitted.
	d.	Should an error in the shop drawings be encountered during installation, the correction, including any field changes found necessary, shall be incorporated on the drawings and the revised drawing submitted to the Engineer for review and approval.
5		**PRE-DELIVERY EQUIPMENT APPROVAL**
		The electrical equipment to be supplied shall be completed, assembled and wired at the factory and shall be inspected and tested by the Engineer for approval prior to delivery to the project site.
6		**COORDINATION**
		The Contractor shall coordinate and work with all other parties with those apparatus he shall connect part/s of the works required herein. The Contractor shall prepare drawings of details of the equipment he supplied,

		location of sleeves, conduits and supports that maybe required by other trades and shall furnish the Owner with at least five (5) copies of these drawings, for the information of all parties concerned. The approval of such drawings shall not relieve the Contractor in any way from the responsibility of properly locating and/or coordinating his work with those of other parties involved.
7		**WORKMANSHIP**
	a.	The work throughout shall be executed in the best and most thorough manner in accordance with the best practice of the trade involved and to the satisfaction of the Engineer.
	b.	The work shall be accomplished by skilled workmen using proper tools and equipment under continuous competent supervision as required by the trade.
	c.	The Contractor shall maintain on file at job site a set of as-built drawings incorporating all actual installation and deviation from the Drawings. The as-built drawings shall be submitted to the Owner prior to provisional acceptance of the electrical works.
8		**FIELD TEST REQUIREMENT**
		The Contractor shall furnish the necessary labor and equipment to perform the following test:
	a.	System test – Each panel board shall be tested with the power equipment connected, circuit breakers closed and all loads and fixtures permanently connected for their intended operation for a minimum of 24 hours continuous operation in the presence of the Engineer, at the expense of the Contractor the entire installation shall be free from any short circuit and from any ground fault (or earth leakages relay). In no case shall the insulation resistance be less than that allowed by PEC regulations for Electrical Equipment of Building and/or manufacturer's recommendations.
	b.	Performance Test and Equipment Setting – It shall be the responsibility of the Contractor to test the entire electrical system for the proper equipment operation. Setting of all protective relays, pilot device and auxiliary system shall conform to the operation requirements. The Contractor shall turnover the entire electrical installation to the Owner in a satisfactory.
9		**WIRES AND CABLES**
	a.	All wire and cables shall be stranded copper, annealed, soft drawn, of 98% conductivity, insulated for 600 V working voltage, and with type "THW" or "THWN" insulation unless otherwise noted on the Drawings. Insulation

		shall bare the manufacturer's name and trademarked, type, volt-ampere rating and size of the conductor.
	b.	Cable for submersible pump operation shall be oil and water resistant. Cable shall have a minimum of two insulation jackets. The inner jacket shall be of rubber or elasticized rubber material while the outer jacket shall be of neoprene, PE or PB material. The outer jacket shall be bare the manufacturers name and trademark, insulation type and application, volt and ampere rating and size of the conductor. Cable shall be uncut and un-spliced from the motor pigtail to the junction shop or terminal for the motor starter. It shall be mixed in placed with straps of acceptable materials for such application. Cable termination to motor pigtail shall be by means of heavy duty splicing kit or its equivalent. Splicing paste shall have a minimum expiration period of one (1) year. Cable shall be manufactured by American Wire and Cable Co.; Columbia Wire and Cable Co.; Phelps Dodge, Philips or approved equal.
	c.	For lighting and power systems no wire smaller than 3.5 mm^2 diameter shall be used. Building wire size 8.00mm^2 diameter and larger shall be stranded.
	d.	Conductors shall not be pulled into the raceway until: 1. Raceway system has been inspected and approved by the Engineer; 2. Masonry work has been completed in the case of concealed installation; and 3. Raceway has been freed from moisture and debris.
	e.	Conductors shall be hand-pulled, using pulling lubricant where necessary.
	f.	Wires for the control system shall have a minimum size of 0.75 mm^2 (AWG#18) and thermoplastic-insulated, unless specified otherwise.
10		**SPLICE AND TERMINATIONS**
	a.	Control conductors shall be spliced or terminated only at the location indicated on the Drawings and on terminal strips or terminal lugs of vendor-furnished equipment. As used in these specifications, "control conductors" are defined as conductors that control the electricity energy delivered to a power-consuming device.
	b.	Branch circuit conductors maybe spliced in suitable fittings at locations determined by the Contractor. Conductors shall be spliced or terminated only at equipment terminals shown on the Drawings. Wire in panels, cabinets, and gutters shall nearly grouped using nylon straps and spread out terminals.

	c.	Control conductors shall be terminated under terminal screws with pre-insulated fork torque lugs or approved equal.
	d.	All external control wiring shall end on the internal wiring terminal block on the control console and shall be properly identified or coded to facilitate service or repair.
	e.	Splices to motor leads in motor terminal boxes shall be wrapped with varnished cambric tape overwrapped with high temperature vinyl temperature vinyl tape, or approved equal.
11		**WIRE AND CABLE IDENTIFICATION**
		Complete electrical installation shall be provided with adequate identification to facilitate the proper control or circuits and equipment and to simplify maintenance. Control device within enclosure shall be identified in accordance with the drawings, using embossed plastic tape. General purpose control conductors shall have red markers. Wire markers shall be plastic –impregnated cloth or approved equal. Control conductor identifications legend shall be in accordance with approved shop drawings and construction drawings. When these drawings do not state the required identification, the Contractor shall assign numbers. Identification shall be attached within 75 mm of the conductor termination. Contractor may use impregnated plastic or split sleeve markers cemented together after insulation, at his option. Motor control conductors shall be identified at his termination, including intermediates strips. Terminal strip shall be identified by imprinted, varnished market strips, attached under terminal strips.
12		**GROUNDING**
	a.	Ground continuity throughout each facility shall be maintained by installing an electrically continuous raceway system. Metallic raceway shall be installed with double locknuts or hubs at enclosures. Non – metallic raceway for branch circuit when specified shall contain copper grounding conductor, either bare or insulated. Such conductor shall be boded to terminal and intermediate metallic enclosures. Unless otherwise specified, ground cables shall be closed in conduits and connections shall be made readily accessible for inspection. For pumping stations/pump houses, plastic conduits shall not be allowed.

	b.	Grounding cables shall be sized in accordance with PEC requirements when not shown on the drawings. Grounding cables shall be connected to a common grounding rod which shall be of copper – weld or copper coated steel and which shall have a maximum line to ground resistance of 25 ohms.
13		**RACEWAY**
	a.	Conduits for interior system shall be rigid steel or made of uPVC material. Joints of steel conduit imbedded in concrete shall be made up with conductive waterproof compounds.
	b.	No conduit smaller than 15mm electrical trade size, nor having more than three 90 deg. bends in any one run shall be used in the system. Bends and offsets shall be smooth and symmetrical and shall be accomplished using tools designed for the purposed intended.
	c.	The ends of all conduits shall be tightly plugged to exclude cement plaster, dust, and moisture while the installation is in progress.
	d.	All raceways above ground shall be rigid steel conduits and shall be secured over concrete surfaces wherein the screws are held in place expansion sleeves. Conduits on exposed work shall be run tight angles to and parallel with the surrounding walls; no diagonal runs shall be allowed and all ends and offsets shall be avoided as far as possible. Where necessary, conduits fittings shall be provided.
	e.	Junction boxes and pull boxes of code gauge steel shall be provided as indicated in the Drawings with suitable fittings to facilitate cable pulling.
	f.	Flexible liquid-tight conduit shall be used for connection of equipment such us motors, transformers, flow and pressure switches and other pilot devices. Erickson couplings shall be used at interconnection with rigid conduits.
	g.	All conduits installed underground shall be provided with at least 75 mm thick concrete envelope.
14		**PANEL METERS**
	a.	Ammeter – the unit shall be quadratic panel type with slide-in-dial and shall have minimum dimension of 70mm x 70mm. Scale range shall be required for the pumping station load current at system voltage adopted; with an accuracy of plus or minus 2% of full scale or better. The unit shall be provided with a 3-position switch connected to phase R, S, and T, and three (3) current transformers of suitable rating each phase.

	b.	Voltmeter – the unit shall be quadratic panel type with slide-in-dine and shall have minimum dimension of 70mm x 70mm. scale ranges shall be required for the system voltage adopted at 60 hertz, with an accuracy of plus or minus 2% of full scale or better. The unit shall be provided with a 3-position selector switch connected across RS, RT, and ST.
15		**HANDLED OPERATING MECHANISM**
		Operating handle for the main circuit breaker shall be designed with the operating handle fitted with the panel board of the control equipment. IT shall be used for operating the door and affecting the "ON_TRIP_OFF" operational of the breaker. It shall be designed such that the door cannot be opened when the breaker is at the "ON" position shall be provide with a door locking mechanism. A release screw shall be provided to permit the interlock to be canceled if it is necessary to open the door with breaker at the "ON" position. Dimension shall be as recommended by the Contractor.
16		**HOUR OPERATION COUNTER**
		Hour operation counter (elapsed time meter) shall be rated 220 volts. 60 hertz and suitable for panel mounting. Counter shall have six (6) digits hour register, the last digit of which shall indicate tenths of an hour. Hour operation counter shall have a square dust-resistant case of 65mm each side. Counter shall be non-resetting type.
17		**SELECTOR SWITCHES**
		Three-position selector switch, where required, shall have three operating positions: manual, off and automatic. Rating of selector switches shall be 220 volts, 60 cps or 48 volts DC and with a current type of load connected. They shall be of thumb –operated pointed type.
18		**PUSH-BUTTONS UNITS**
		Push-buttons units shall be standard-duty type, with silver momentary contact-type provided with springs to insure return to their original position. Ratings of push-button unit shall be 230 volts, 60 cps or 48 volts DC with a current capacity suitable for the type of load connected in series with them. Push-button unit shall be concave shaped with a minimum diameter of 20mm. Text printed in front of push-button shall indicate its function.
19		**PILOT LAMPS/INDICATORS**
		Pilot lamps shall be rated 220 volts, 60 cps or 48 volts DC as required by their application. They shall be clear–glass incandescent type.

		All pilot lamp indicators shall be designed for front mounting and of a square, round or rectangular type. Text printed on the face of the lamps shall indicate the function of the lamp. Changing of the lamp shall be from the front.
20		**NAMEPLATES**
		Name plates shall be of hard plastic material at least 2 mm thick. Words as indicated on the plans shall be etched on nameplates in white on a black background. Letter s shall be easily readable and in no instance smaller than 10 mm in height. Nameplates shall be affixed for control panel by means of flat head screws or glued on.
21		**FUNGUS CONTROL FOR ELECTRICAL COMPONENTS**
		Electrical equipment shall be treated to resist fungus and moisture as follows:
	a.	Current carrying components such as switches, fuses and contact shall not be treated. Other materials and components, which are inherently fungus-resistant or are protected by hermetic sealing also, need not be treated.
	b.	Circuit elements not covered above and which have a temperature rise of not more than 24˚C (75˚F) when operating at full loads shall be coated with fungus-resistant varnish. Fungus resistant varnish shall consist paraphynol formaldehyde resin in combination with tung oil in suitable salient, made fungistatic by the addition of not less than 7 to 8 percent salicy-talinide, suitable for the overall treatment of assembled electronic communication, and associated electrical equipment and certain component sub-assembly, to prevent fungus growth. The method of treatment shall be accordance with the manufacturer's advice and recommendations. Circuit elements include, but not limited to cable, wire, switchboards, panel boards, terminal and junction boxes, capacitors and coil.
22		**AUXILIARY PROTECTIVE DEVICES**
		The supplier shall furnish and install all auxiliary motor protective devices intended for their application as shown on the Drawings and/or as specified herein.

A1. GSM-controlled/Variable Frequency Drive (VFD) Motor Controller for 100 Hp, 460 V, 3-phase

ITEM No.		SPECIFICATION GSM-Controlled Variable Speed Drive (VFD) Motor Controller for 100 Hp, 460 V
1		The pumping station shall be upgraded into constant pressure system Variable Frequency Dial (VFD) and pressure transducer as feedback signal and shall be controlled and monitored remotely thru mobile phones using Short Message Service (SMS) system complete with other electrical /electronic accessories for the proper completion and operation of the system. The supplier shall be an authorized distributor which has an accomplished project of GSM-controlled VFD. Prior to installation the Contractor shall conduct VFD and GSM controller demo as simulation or actual site demo on one of the existing Pump Station of the Owner to check the functionality of the products to be installed. Delivery, installation and commissioning shall be done after approval of the brochures and shop drawings of the LWUA and PWD Engineers.
2		The GSM-controlled VFD shall be pre-wired in a walled mounted, powder coated, indoor type metal enclosure with the following main components and specifications:
	a.	1-unit Variable frequency drive; 100 Hp, 460 Vac, 3-phase, up to 400 HZ output frequency; programmable overload protection; built-in PID control and energy saving function; IP20 rated; CE, UL, c-UL & C-tick global approved standards.
	b.	1 unit VFD main disconnect switch, breaker type.
	c.	1 set GSM/SMS controller, complete with programmable logic controller, operator graphic panel display, modem and antenna. The GSM/SMS controller shall be connected to GSM network service provider at the option of the PWD.
	d.	1 set GSM controller configuration software and transfer cable to (PC to controller).
3		Configuration of the GSM controller to meet the following operation and system requirements:
	a.	The operator display panel shall have graphical representation of the actual pumping station set-up showing **pump status, current target pressure, actual system pressure, kilowatt-hour consumption and flow metering** (note: kw-hr & flow metering devices are for future

		installations, the controller shall be ready to link these devices). I shall be capable of indicating alpha numeric alarm messages and historical graphical trending for system pressure and motor speed.
	b.	The GSM/SMS controller shall be used as data logger and supports Micro SD card for data storage and additional memory requirements. All data table shall be downloaded to PC in excel file format. Communication cables and software shall be included in the offer.
	c.	Fully programmable pump operation scheduling (operating time can be changed by the authorized operation via SMS and at a local display panel).
	d.	Remote control using SMS for VFD start/stop command and changing target pressure.
	e.	System monitoring via SMS that includes VFD that includes actual VFD status (running, stopped or tripped) and actual system pressure.
	f.	Alarm notification via SMS that includes VFD tripped, high or low pressure alarms and well low level alarm.
	g.	Available pulse input for flow monitoring.
	h.	Have minimum of three (3) mobile phone numbers that can communicate on this controller. These numbers can be edited, deleted and saved on the operator display panel.

A2. Automatic Transfer Switch Technical Specifications and Function Description

1	ATS Type	Molded Case Circuit Breaker
2	Actuator Type	Motorized
3	Ampere Rating	175 Amperes
4	Rated Voltage	460 Volts
5	Number of Phase	3-Phase, 3 wire
6	Rated Frequency	60 Hz

7	Control Voltage	230 Vac
8	Enclosure Rating	Metal Enclosure, NEMA 3
9	Time Delay, Normal to Emergency	Provide time delay when transferring from normal power source to the generator power source. Adjustable time from 1 second to 60 minutes
10	Time Delay, Engine Start	Provide time delay initiation of the generator engine start circuit in order to override momentary power outages or voltage fluctuations of the normal power source. Adjustable time from 1 second to 60 minutes.
11	Time Delay, Emergency to Normal	Provide delay transfer from generator power source to the normal power source to permit stabilization of the normal power source before retransfer is made. Adjustable time from 1 second to 60 minutes.
12	Time Delay, Engine Cool Down	Provide delay to permit the generator to continue to run unloaded after retransfer to normal has occurred. Adjustable time from 1 second to 60 minutes.
13	Source Indication	Provide pilot lights to indicate available power source (Normal or Generator)
14	Maintenance Selector Switch	Provide selector switch (Manual/Off/Auto) operation, which can disconnect the control power allowing testing of logic circuitry without initiating load transfer.
15	Test selector Switch	Provide selector switch (Test On/Off) operation, which can simulate a loss of normal power source, causing engine to start and initiate a load transfer to generator power source.
16	Three Phase Under Voltage Sensing Relay	Provide three-phase voltage sensing for under voltage adjustable up to 20%.
17	Automatic Pump Start	Provide control logic circuitry for automatic pump start after each successful transfer from normal power source to generator source and vice versa.
18	Electrical Interlock	Provide electrical interlock to prevent accidental activation of any power source when the other source is actively in operation.

A3. Distribution Transformers and Pressure Transducers

1		**PRESSURE TRANSDUCERS**	
	a.	Provide gauge pressure transducers as shown on the plans. Pressure transducer shall be an electronic type with linear with linear output and shall have an accuracy of ±0.2% of the calibrated span.	
	b.	Transducer shall have 4-20 mA output, span of 0-100 psi and a range of 0 to 100 psi. Operating temp. is -40 to 125 and power supply	
	c.	Wetted parts shall be SUS3161. Process connection shall be ½" NPT.	
	d.	All required accessories for the programming and configuration shall also be provided with the unit. The unit shall have a digital indicator with the range setting switch. The unit shall be capable to operate 24 VCD power supply. All electrical cables shall be of adequate size and type shall be provided with the unit. Experts or Technicians to supervise installation, testing of the item shall be made present by the Supplier during the commissioning of the unit. The transmitter shall be in environmental protection IP65/NEMA 4X. The flow meter shall be similar to "Yokugawa", "Endress+Hauser, or approved equivalent.	
	e.	Enclosure shall be 316 Stainless Steel, IP65	
2		**DISTRIBUTION TRANSFORMERS**	
	a.	The transformers shall be brand new oil immersed, self-cooled, double bushing pole mounted-type with top changer, and has the following specifications:	
			No. of units	3
			KVA rating	75
			Primary Voltage, KV	7620/13200Y
			Secondary Voltage	230/460
			Frequency, HZ	60

		Turn Ratio Tolerance, % (tap 3)	15.833%
		No load losses	28
		Full-load losses	105
		Efficiency	98.95%
		Notes: The units shall conform to the Local Power Cooperative (SOCOTECO II) maximum allowable cooper and core losses; 1. Expenses for the calibration/testing of meter and transformers and its protective devices shall be borne by the Contractor.	
	b.	Each transformer shall be furnished with 2-no-load manual winding taps at 2 ½% above and below normal voltages. It shall have grounding pads located diagonally on opposite corners of the tank base, mounting lugs of transformer pole mounting bracket cluster. The core and winding of the transformer shall be designed and constructed to compliance to all applicable standards prior to delivery, installation and acceptance. Required fuse cut-outs and arresters assemblies shall be supplied by the Contractor.	

A.4 Auxiliary Transformer

1		**AUXILIARY TRANSFORMER**	
	a.	Auxiliary Transformer shall be of suitable capacity as required by the system, rated 60 hertz, dry-type, two-winding and mounted inside the motor control enclosure as specified in the plan. Auxiliary Transformer must be capable of maintaining a high degree of voltage regulation (not less than 95%) from no load full through the worst momentary inrush requirements of the control components, lighting and auxiliary power. It shall have insulation good for 80 deg. C rise over an ambient of and a hot spot temperature of 40 deg. C and 150 deg. C respectively with a BIL of 10KV. Wiring terminations shall be easily accessible. Control transformer shall be manufactured in accordance with US NEMA or IEC Standards.	
		Capacity/Rating	5 KVA
		Primary Voltage	460 V
		Secondary Voltage	230 V
		Phase	Single Phase

B. PUMPING EQUIPMENTS RELATED ACCESSORIES

1.		**SCOPE AND LIMIT OF CONTRACT**
	a.	The scope of work shall be supply, delivery and installation and commissioning of one (1) unit of submersible pump, motor assembly, column pipes, discharges line fittings, submersible cable and civil work i.e., pump foundation, and pipe supports as shown on the drawings. All equipment to be delivered shall be brand new units.
2.		**CONDITIONS**
		The scope of work shall be supply, delivery and installation of one (1) set of submersible pump and related accessories to PWD.
		The Supplier shall be responsible for the proper installation of the supplied pump unit.
		Prior to delivery and installation, the Supplier shall inform /invite LWUA engineer/s and at least two (2) PWD representatives to conduct laboratory testing on the pumping equipment to ensure conformance with the design parameters. All transportation, laboratory expenses and other incidental expenses shall be borne by the Contactor.
		In case the unit failed to pass the laboratory testing, the Supplier may make necessary corrections/changes to replace the unit without cost to the owner/PWD.
		The Supplier shall install the pump within sixty (60) days after signing/receipt of Purchase Order (PO) and Notice of Proceed (NTP). The 60 day time frame shall be allotted in order to check the proper alignment of the pump-motor assembly and make necessary corrections of both mechanical and electrical and electrical failures found during installation and construction be spliced using a splicing kit (3M brand) in conformity with the Motor Hp rating. The Supplier shall inform the PWD measures and proper procedures on pump operation to guarantee a smooth and proper function of the newly installed unit.
		Field testing shall be made once the mounted unit is ready for operation and when both the PWD and Supplier have finished their scopes of work on the installed unit LWUA engineers shall conduct field testing with the presence of Supplier's representative and PWD.
		In case the pump failed during field testing, the Supplier shall make necessary corrections, repair or replace the unit without cost to the Owner.

		All incidental expenses including the pulling out and transporting of the pump unit shall be borne by the Supplier.	
		In case of delay, the supplier shall then be subjected to Liquidated Damage (LD) under prevailing law until the unit has been tested/accepted.	
		Computation of the said LD shall conform to the provisions of RA9184.	
3		**SUBMERSIBLE PUMP (OPERATING REQUIREMENTS)**	
		Number of Units	1
		Minimum Capacity at designed Head, Lps (Gpm)	45 (713)
		Designed Head TDH, m(ft)	131.41 (431)
		Minimum Pump Laboratory Efficiency at design head (exclusive of pump column friction), percent	72%
		Location of pump suction strainer, m(ft)	82 (269)
		Design Speed	3400-3600
		Maximum Diameter of motor/pump bowl. Mm(in.)	200 (8)
		Size of existing/installed column pipe mm (in.), Sch.40 steel pipe BI, Seamless	150 (6)
		Pipe Reducer (connecting pump and riser pipe)	Stainless (schedule 40) or seamless pipe
		Impeller Type	Semi-open/Enclosed
		Pump Shaft Type	18-8 Stainless Steel
		Diameter of Pump Bearing	At Least 2.50 times the Diameter of shaft
		Pump Bowl Casing	Stainless Steel
4		**SUBMERSIBLE MOTOR**	
		Motor Rating, Hp (KW):	100 HP (74.6)

		Frequency	60
		Rated Voltage (Volts)	460
		Phase	3
		Type of Submersible Cable	3C- Flat cable
		Service Factor	1.15
		Rated Current	124 Amp
		Rated Current (S.F.)	77.5
		Power Factor (S.F.)	0.83
		Power Factor (4/4)	0.80
		Efficiency (S.F.)	82.5%
		Efficiency (4/4)	83%
		Design Speed	3450 RPM
		Winding Wire	Max temp. NEMA class 200
		Resin system	Anti-track self-healing
		Windings	Hermetically-sealed
		Water-bloc lead	Removable
		Flange design	Double
		Shell	Stainless Steel
		Shaft	Splined Stainless Steel
		Thrust bearing	Kingsbury-type water lubricated
		Diaphragm	Pressure equalizing

		Slinger	Sand Fighter
		Lead wire configurations	3
		Bar rotor.	Copper
5		**FIRE EXTINGUISHER**	
		The Supplier shall furnish and install a fire extinguisher inside the pump house at the most accessible place as determined by the Engineer. The fire extinguishers shall be dry - type ABC with a gross weight of 6.5 kgs. capable of extinguishing fire caused by ordinary combustible flammable liquid and electric equipment. It shall have discharge range of 20 ft.	
6		**SLEEVE-TYPE COUPLING (with harness set)**	
		The contractor shall furnish and install two (2) units of 150 mm (6 in.) dia. Sleeve-type coupling as shown on the drawings. The sleeve-type coupling shall be Smith Blair, Style 411 or Style 412, equivalent Styles manufactured by Dresser, or approved substitute. Coupling shall be of steel bolts, and shall be of sizes to fit the pipe and fitting as shown. The middle ring shall not be less than 6 mm (1/4 in) and 400 mm (16 in) long for long- sleeve couplings. Bolts for exposed coupling shall be hot-dipped galvanized steel bolts as shown on the drawings.	
7		**PRESSURE GAGES (Main Line and booster pump water line)**	
		The pressure gages shall have a 75 mm (3 in) face diameter, 6 mm (1/4 in) threaded connection. The gages shall have a pressure range from 0 to 200 psi unless otherwise specified. The pressure elements of the gage shall be protected against excessive pulsation and surges by external pressure snubbers. The pressure gage shall be similar to "ASCHROFT" or approved equal.	
8		**MANOMETER**	
		The manometer shall be made of 10 mm transparent plastic tubing mounted on a 25mm x 50mm kiln dried wooden frame as shown on the drawings. The wooden frame shall be painted in white and shall have direct reading scale calibrated manometer assembly shall be bolt connected with a 10 mm x 50 mm steel plate welded at the orifice test as shown on the Drawings.	

9		**CHECK VALVE**
		The Contractor shall furnish and install a 150 mm (6 in) dia. swing type flanged-end check valve at the main discharge line as shown on the drawings. The valve shall be provided with an outside-lever-and weight located at the stainless steel swing. The valve shall be designed for a minimum water working pressures of 1.0 Mpa (150 psi), and shall have bronze gate rings and seat rings and type 18-8 stainless steel hinge pins. The check valves shall be designed so that disc and body seat may be easily removed without removing valve from the line. The valve shall be provided with coating for corrosion protection. Check valve shall be similar to AVK or approved equal.
10		**BUTTERFLY VALVE**
		The Contractor shall furnish and install two (2)-150 mm (6 in.) dia. butterfly valve gear with hand operated wheel for the main discharge and test line as shown on the drawings. The valve shall be new, of current manufacture, similar to AVK or approved equal.

C. 225 KVA DIESEL GENERATOR

1		**SCOPE/LIMIT OF CONTRACT**
1.1		The scope work shall be supply, delivery and installation of one (1) unit brand new diesel generator set, 225 KVA, silent-type, complete with accessories and miscellaneous equipment as specified.
1.2		Electrical conduits from Gen-set to Automatic Transfer Switch.
2		**CONDITIONS**
2.1		The scope of work shall be supply, delivery and installation of one (1) unit of brand new diesel generator set, 225 KVA, silent-type, and related accessories to Polomolok Water District (PWD).
2.2		The Supplier shall be responsible for the proper installation of the supplied gen-set.
2.3		The supplier shall install the gen-set within sixty (60) days after signing/receipt of Purchase Order (PO) and Notice to Proceed. The said time frame shall be allotted to check construction/installation and make necessary corrections. The supplier shall instruct PWD

		measures/procedures on the proper operation to guarantee a smooth and efficient function of the unit.
2.4		Field testing/inspection shall be made on the installed unit to insure conformance with the specifications.
2.5		In case the gen-set failed in the test, the Supplier shall correct/check or replace the unit without cost to the owner (PWD) including all incident expense incurred.
3		**GENERATOR SET**
3.1		General – The generator set shall be directly coupled mounted on a single steel sub base, complete with all necessary engine and generator accessories, ready for operation, manually push-bottom/key start type, related for standby power supply under conditions specified herein. The complete diesel engine generator set shall be free from critical and torsional vibration within the operating speed range.
3.2		**TEST REQUIREMENTS**
		The diesel generating set shall be tested to determine whether the equipment has been properly assembled, aligned, adjusted and connected. All incidental expenses relative to the testing shall be borne entirely by the Contractor.
3.2.1		Laboratory Test – The unit shall be tested under varying loads with guard and exhaust system in place. Test shall include the following:
	a.	Single- step load pick -up
	b.	Transient and steady- stage governing
	c.	Safety shutdown device testing
	d.	Voltage regulation
	e.	Related power
	f.	Maximum power

3.2.2		**ON-SITE TEST**
	a.	Checking of fuel and lubrication for conformity with the manufacturer's recommendation, under the environmental conditions present and expected.
	b.	Accessories that normally function while the set is standing by shall be checked prior to cranking the engine.
	c.	Start-up under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during running, normal and emergency line to line voltage and phase rotation.
	d.	Engine coolant temperature, oil pressure and battery charge level along with generator voltage, amperes and frequency shall be monitored throughout the test.
3.3		**DIESEL ENGINE DRIVE**
		The engine shall of the water cooled, heavy duty, 4-cycle naturally aspirated/turbocharged, industrial type equipped with 12/24 volt DC solenoid engaged electric motor starter and shall develop the full continuous horsepower required by the alternator using diesel fuel when operating at a speed not exceeding 1800 rpm. The engine shall have alumni pistons, removable type cylinder sleeves, and heavy-duty replaceable precisions type bearings and equipped with vane type oil pump, by pass oil filter, oil level indicator, a residential type silencer exhaust system.
3.3.1		Starter – The engine shall be equipped with 12/24 volts DC solenoid engaged electric motor starter.
3.3.2		Lubricating System – The Lubricating system shall have a vane type oil pump, a by-pass oil filter, oil pressure gauge and oil level indicator.
3.3.3		Exhaust System – The engine shall be equipped with a residential silencer, sized in accordance with the engine manufacturer's recommendation. Maximum backpressure measured at the exhaust header shall not be more than350 mm (14 in) of water column. The silencer shall be fabricated of carbon steel designed for 1000 F service and shall be shop painted with silicon base high heat resisting aluminum paint. The silencer shall be installed with Flexible metal expansion section of stainless steel and not less than 450 mm (18 in) in length as shown on the Drawings and shall be designed together with all pipes, bend, bolts, nuts, and clamps for temperature of not less than 1000 F.

		The entire exhaust assembly excluding expansion joint shall be insulated with 250 mm layers of magnesium insulation with lugging as shown on the drawings.
3.3.4		Fuel System – The fuel system shall include an injection pump, engine fuel transfer pump, flexible fuel connections, fuel filters and shut –off valves.
3.3.5		Fuel Oil Storage Tank – The fuel tank shall have a capacity of at least 8 hours of continuous operation and shall come complete with all accessories. Inside surface of the tank shall be picked or sandblasted to be clean of all dust and foreign matter and lightly coated with oil. All tank openings shall be sealed prior to shipping.
3.3.6		Fuel Level Gauge – The Contractor shall furnish and install level gauge on the fuel oil tank for visual indication of the amount of fuel remaining on the tank. The gauge shall be either clear glass or plastic materials resistant to normal diesel fuel corrosion. The level gauge shall be provided with valves on both ends for isolation during routine maintenance and replacements. The gauge shall be of appropriate length with graduation calibrated in both in liters and percentage of the total fuel tank capacity.
3.3.7		Safety Switches – The engine shall be equipped with safety switch which will cut-off the engine on low oil pressure and high water temperature.
3.3.8		Battery – There shall be installed a battery complete with cables for supplying 12/24 volts DC power to the engine. The battery shall have the necessary ampere-hour rating for cranking the engine for 10 minutes.
3.3.9		Battery Charger – The battery charger shall be 12/24 volts DC output, 230 volts AC input. It shall have an ampere output sufficient to recharge the battery in 4 hours when the battery is 50% discharge. The charger shall be incorporated adjustable float and equalizing voltage potentiometer. A current limit signal shall be supplied in the control circuit from the current sensing resistor. It shall be of the full wave rectifier type and shall include all the required standard components.
3.4		**MISCELLANEOUS EQUIPMENT**
		The engine shall be equipped with the following:
	a.	Intake air cleaner.

	b.	Safety switches which cut off the engine on low oil pressure and high water temperature.
	c.	One (1) set of original oil lube filters and fuel filters. In addition, the Contractor shall provide three (3) sets of original spare oil lube and fuel filters.
	d.	Battery and Charger complete with cables.
3.5		**ALTERNATOR**
3.5.1		The alternator shall be rated for standby operation at 225 KVA (min.) 0.80 PF, 3-phase, 60 cps, 1800 rpm, 460 volts, 50 C ambient temperature at 75M a.s.l. and shall be directly coupled to the engine. The alternator shall be salient-pole; 12-leads reconnectible self-ventilated of drip-proof construction with a mortisseur and skewed stator for smooth voltage waveform. It shall be single bearing, synchronous type standards. The insulation shall meet the NEMA MG 1-22.40 for class H insulation and shall be abrasion detritions per MIL 1-24092. Temperature rise of the rotor shall be limited to NEMA class F ratings.
3.5.2		The excitation system shall be of brushless construction controlled by a solid-state voltage regulator capable of maintaining voltage within +/- 2% at any constant load from 0% to 100% of the rating. The regulator must be isolated to prevent tracking when connector to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operation. The solid-state regulator module shall be shock mounted and epoxy encapsulated for protection against vibration and atmospheric deterioration.
3.5.3		Upon one-step application of any load up to 100% of the rated load at 0, 80 PF the voltage dip shall not exceed 20% and shall recover to +/-2% of the rated voltage within one (1) second.
3.5.4		Alternator shall be capable of sustaining an overload capacity of 300% full load current at zero power factors for a period of ten seconds without damage to it. Output voltage recovery after sudden application or rejection rated load shall be within 0.3 second.
3.5.5		A resettable line current sensing circuit breaker with inverse time versus current response shall be furnished which protects the generator from damage due to its own high current capability. This breaker shall not trip within ten seconds specified above to allow selective tripping of

		downstream fuses or circuit breaker under fault condition. This breaker shall not trip without ten seconds specified above to allow selective tripping of downstream fuse or circuit breaker under a fault condition. This breaker shall not automatically reset preventing restoration of voltage if maintenance is being performed. Field current-sending breaker will not be acceptable.
3.5.6		Alternator shall be open, drip-proof construction with an over-all efficiency of at least 85% at full load.
3.5.7		Alternator windings and electrical components shall be tropicalized.
3.6		**GENERAL CONTROL PANEL**
3.6.1		General – A set mounted alternator/engine control panel shall be supplied with the generator set. The control panel shall be vibration-isolated, dead front construction, 14 gauge steel NEMA 1 enclosure. Cabling and control wiring shall be either side or bottom.
3.6.2		Instrument – Panel shall contain, but not limited to the following equipment.
	a.	Circuit breaker, thermal-magnetic, industrial type rating as required.
	b.	1 voltmeter with phase selector switch.
	c.	1 ammeter with phase selector switch and current transformers
	d.	1 frequency meter
	e.	1 hour operation counter
	f.	Panel illumination lights and switches
	g.	Indicating relays and fault indicator lamps for low oil pressure, high engine temperature and over speed.
	h.	Engine ammeter
	i.	Engine lube oil pressure gauge
	j.	Engine water temperature gauge
	k.	Tachometer

3.6.3		Operating Switches and Push buttons shall include
	a.	Manual start/stop push buttons/key switch
	b.	Emergency Stop Button
	c.	Control Lamp Test
	d.	Selector Switch
	e.	Test Switch
3.6.4		Operation Controls – During operation, the generating se t shall be monitored for the following disturbances:
	a.	Loss of lube-oil pressure
	b.	Excess engine temperature
	c.	Alternator overload
	d.	Alternator short circuit
	e.	Over speed
		Should any of the faults listed under (a) to (c) arise, the individual signal relay installed for the special task shall respond. To avoid lasting damage if operation were to continue, the generating set shall be automatically shut-off and a subsequently new starting effort shall be blocked and corresponding fault indicator lamp shall be on.
3.6.5		At protracted overloading of the alternator, the thermal over current release with time delay shall cause the alternator main circuit breaker to trip. The set shall continue in operation unloaded to obtain cooling of the alternator.
3.6.6		In case of leader short circuit during an emergency supply operation, the alternator shall immediately be disconnected from the fault location by means of the electromagnetic trip relay of the main circuit breaker.
3.7		**AUTOMATIC TRANSFER SWITCH (BREAKER TYPE)**
		An Automatic Transfer Switch (ATS), 3-phase, 60 hertz, 3 poles with solid neutral for voltage specified herein and for the current rating

		indicated on the drawings and as per specified specifications is to be provided.
3.8		**WARRANTY**
		All equipment stated herein shall be warranted for a period of one (1) year of trouble-free operation under normal operating condition. The supplier shall replace damaged parts including services.

36.0 MABACQUIAO PUMP STATION (PS #11)

A. ELECTRICAL COMPONENTS

1		**GENERAL**
	a.	The Electrical works shall consist of furnishing all equipment, labor, materials, tools and all necessary wiring accessories for the proper completion and operation of the **VFD Motor Controller with Automatic Transfer Switch (ATS) electrical system** as specified herein and as shown on the drawings.
	b.	The Drawings and Specifications are intended to provide only a broad outline of the required equipment and system of operation and may not include all details of design construction. Any item of work or material through not expressly shown on the Drawings or specified herein but is obviously necessary to obtain a usable installation shall be deemed included in the required works.
	c.	All system components shall be compatible with each other and suitable for 24-hours continuous operation.
	d.	As used in these Specifications, the word "Owner" refers to the Water District named in the Contract. The word "Engineer" refers to the individual or firm authorized by the Local Water Utilities Administration (LWUA), acting as the Owner's representative to oversee the execution of the Contract. The word "Contractor" refers to the party who entered into Contract with the Owner or LWUA.
	e.	Construction of Service Entrance Pedestal will be done by the Polomolok Water District, however, service wire and conduits will be provided and be installed by the Contractor.

	f.	Demolition and reconstruction of the Chlorine Room wall and pull out of the existing Motor Control will be done by the Polomolok Water District.
	g.	Capable pit and conduits will be provided by the contractor.
	h.	Pull out and reinstalled of existing discharge pipes and fittings will be done by the Contractor.
	i.	Electrical installation (i.e. conduits, enclosures, etc.) shall be protected from ants and other pests /insects entry.
2		**CODES, REGULATIONS, PERMITS AND FEES**
	a.	The works required herein shall be done in accordance with the latest edition of the Philippine Electrical Code (PEC), the regulations and requirements of power and telecommunications utilities as far as their permanent services are concerned, and the government ordinance enforced in the locality. In case of conflict with these specifications or the drawings, the preceding clause shall govern.
	b.	The contractor shall be responsible for securing all necessary permits from the pertinent government authorities, at his expense, both for the construction and for the operation of the system upon completion of the work. The Contractor shall furnish the Owner with the approved Certificate of Final Electrical Completion.
3		**MATERIAL STANDARDS**
	a.	All materials, components, and equipment to be supplied and/or installed shall be of recent manufacturer, brand new (at most, three (3) years ex-stock) unused and suitable for intended operation. They shall conform with the U.S. Underwriters Laboratory (U/L) Standard for Safety, ASA, NEMA and ASTM in every case where such standards have been established; or with any other International Standard acceptable to the Engineer. Motor control specifications shall conform with the approved electrical plans (i.e. Enclosures)
	b.	All materials and components shall be as specified unless specifically exempted; in which case, they shall be the best of their respective kind.
	c.	Sample of materials to be supplied shall be submitted for approval when required by the Engineer.

	d.	All electrical equipment and materials shall bear the manufacturer's inspection label, unless exception to this requirement is inherent to a particular.
4		**SHOP DRAWINGS AND CATALOG DATA**
	a.	The Contractor shall submit to the Engineer for approval seven (7) copies of shop drawings of equipment and control components he intends to supply, as are indicated in the drawings and specifications.
	b.	Shop drawings shall provide sufficient information to evaluate the stability and compliance of the proposed equipment and control components with the plans and specifications.
	c.	Catalog data shall be also be submitted to supplement the shop drawings. Catalog cuts, bulletins, brochures or the like, or photocopies of applicable pages thereof shall be submitted where drawings for certain items are not required to be submitted.
	d.	Should an error in the shop drawings be encountered during installation, the correction, including any field changes found necessary, shall be incorporated on the drawings and the revised drawing submitted to the Engineer for review and approval.
5		**PRE-DELIVERY EQUIPMENT APPROVAL**
		The electrical equipment to be supplied shall be completed, assembled and wired at the factory and shall be inspected and tested by the Engineer for approval prior to delivery to the project site.
6		**COORDINATION**
		The Contractor shall coordinate and work with all other parties with those apparatus he shall connect part/s of the works required herein. The Contractor shall prepare drawings of details of the equipment he supplied, location of sleeves, conduits and supports that maybe required by other trades and shall furnish the Owner with at least five (5) copies of these drawings, for the information of all parties concerned. The approval of such drawings shall not relieve the Contractor in any way from the responsibility of properly locating and/or coordinating his work with those of other parties involved.

7		**WORKMANSHIP**
	a.	The work throughout shall be executed in the best and most thorough manner in accordance with the best practice of the trade involved and to the satisfaction of the Engineer.
	b.	The work shall be accomplished by skilled workmen using proper tools and equipment under continuous competent supervision as required by the trade.
	c.	The Contractor shall maintain on file at job site a set of as-built drawings incorporating all actual installation and deviation from the Drawings. The as-built drawings shall be submitted to the Owner prior to provisional acceptance of the electrical works.
8		**FIELD TEST REQUIREMENT**
		The Contractor shall furnish the necessary labor and equipment to perform the following test:
	a.	System test – Each panel board shall be tested with the power equipment connected, circuit breakers closed and all loads and fixtures permanently connected for their intended operation for a minimum of 24 hours continuous operation in the presence of the Engineer, at the expense of the Contractor the entire installation shall be free from any short circuit and from any ground fault (or earth leakages relay). In no case shall the insulation resistance be less than that allowed by PEC regulations for Electrical Equipment of Building and/or manufacturer's recommendations.
	b.	Performance Test and Equipment Setting – It shall be the responsibly of the Contractor to test the entire electrical system for the proper equipment operation. Setting of all protective relays, pilot device and auxiliary system shall conform to the operation requirements. The Contractor shall turnover the entire electrical installation to the Owner in a satisfactory.
9		**WIRES AND CABLES**
	a.	All wire and cables shall be stranded copper, annealed, soft drawn, of 98% conductivity, insulated for 600 V working voltage, and with type "THW" or "THWN" insulation unless otherwise noted on the Drawings. Insulation shall bare the manufacturer's name and trademarked, type, volt-ampere rating and size of the conductor.
	b.	Cable for submersible pump operation shall be oil and water resistant. Cable shall have a minimum of two insulation jackets. The inner jacket

		shall be of rubber or elasticized rubber material while the outer jacket shall be of neoprene, PE or PB material. The outer jacket shall be bare the manufacturers name and trademark, insulation type and application, volt and ampere rating and size of the conductor. Cable shall be uncut and unspliced from the motor pigtail to the junction shop or terminal for the motor starter. It shall be mixed in placed with straps of acceptable materials for such application. Cable termination to motor pigtail shallbe by means of heavy duty splicing kit or its equivalent. Splicing paste shall have a minimum expiration period of one (1) year. Cable shall be manufactured by American Wire and Cable Co.; Columbia Wire and Cable Co.; Phelps Dodge, Philips or approved equal.
	c.	For lighting and power systems no wire smaller than 3.5 mm^2 diameter shall be used. Building wire size 8.00mm^2 diameter and larger shall be stranded.
	d.	Conductors shall not be pulled into the raceway until: 1. Raceway system has been inspected and approved by the Engineer; 2. Masonry work has been completed in the case of concealed installation; and 3. Raceway has been freed from moisture and debris.
	e.	Conductors shall be hand-pulled, using pulling lubricant where necessary.
	f.	Wires for the control system shall have a minimum size of 0.75 mm^2 (AWG#18) and thermoplastic-insulated, unless specified otherwise.
10		**SPLICE AND TERMINATIONS**
	a.	Control conductors shall be spliced or terminated only at the location indicated on the Drawings and on terminal strips or terminal lugs of vendor-furnished equipment. As used in these specifications, “control conductors” are defined as conductors that control the electricity energy delivered to a power-consuming device.
	b.	Branch circuit conductors maybe spliced in suitable fittings at locations determined by the Contractor. Conductors shall be spliced or terminated only at equipment terminals shown on the Drawings. Wire in panels, cabinets, and gutters shall nearly grouped using nylon straps and spread out terminals.
	c.	Control conductors shall be terminated under terminal screws with pre-insulated fork torque lugs or approved equal.

	d.	All external control wiring shall end on the internal wiring terminal block on the control console and shall be properly identified or coded to facilitate service or repair.
	e.	Splices to motor leads in motor terminal boxes shall be wrapped with varnished cambric tape overwrapped with high temperature vinyl temperature vinyl tape, or approved equal.
11		**WIRE AND CABLE IDENTIFICATION**
		Complete electrical installation shall be provide with adequate identification to facilitate the proper control or circuits and equipment and to simplify maintenance. Control device within enclosure shall be identified in accordance with the drawings, using embossed plastic tape. General purpose control conductors shall have red markers. Wire markers shall be plastic –impregnated cloth or approved equal. Control conductor identifications legend shall be in accordance with approved shop drawings and construction drawings. When these drawings do not state the required identification, the Contractor shall assign numbers. Identification shall be attached within 75 mm of the conductor termination. Contractor may use impregnated plastic or split sleeve markers cemented together after insulation, at his option. Motor control conductors shall be identified at his termination, including intermediates strips. Terminal strip shall be identified by imprinted, varnished market strips, attached under terminal strips.
12		**GROUNDING**
	a.	Ground continuity throughout each facility shall be maintained by installing an electrically continuous raceway system. Metallic raceway shall be installed with double locknuts or hubs at enclosures. Non – metallic raceway for branch circuit when specified shall contain copper grounding conductor, either bare or insulated. Such conductor shall be boded to terminal and intermediate metallic enclosures. Unless otherwise specified, ground cables shall be closed in conduits and connections shall be made readily accessible for inspection. For pumping stations/pump houses, plastic conduits shall not be allowed.
	b.	Grounding cables shall be sized in accordance with PEC requirements when not shown on the drawings. Groundingcables shall be connected to a common grounding rod which shall be of copper – weld or copper

		coated steel and which shall have a maximum line to ground resistance of 25 ohms.
13		**RACEWAY**
	a.	Conduits for interior system shall be rigid steel or made of uPVC material. Joints of steel conduit imbedded in concrete shall be made up with conductive waterproof compounds.
	b.	No conduit smaller than 15mm electrical trade size, nor having more than three 90 deg. bends in any one run shall be used in the system. Bends and offsets shall be smooth and symmetrical and shall be accomplished using tools designed for the purposed intended.
	c.	The ends of all conduits shall be tightly plugged to exclude cement plaster, dust, and moisture while the installation is in progress.
	d.	All raceways above ground shall be rigid steel conduits and shall be secured over concrete surfaces wherein the screws are held in place expansion sleeves. Conduits on exposed work shall be run tight angles to and parallel with the surrounding walls; no diagonal runs shall be allowed and all ends and offsets shall be avoided as far as possible. Where necessary, conduits fittings shall be provided.
	e.	Junction boxes and pull boxes of code gauge steel shall be provided as indicated in the Drawings with suitable fittings to facilitate cable pulling.
	f.	Flexible liquid-tight conduit shall be used for connection of equipment. Erickson couplings shall be used at interconnection with rigid conduits.
	g.	All conduits installed underground shall be provided with at least 75 mm thick concrete envelope.
14		**PANEL METERS**
	a.	Ammeter – the unit shall be quadratic panel type with slide-in-dial and shall have minimum dimension of 70mm x 70mm. Scale range shall be required for the pumping station load current at system voltage adopted; with an accuracy of plus or minus 2% of full scale or better. The unit shall be provided with a 3-position switch connected to phase R, S, and T, and three (3) current transformers of suitable rating each phase.
	b.	Voltmeter – the unit shall be quadratic panel type with slide-in-dine and shall have minimum dimension of 70mm x 70mm. scale ranges shall be required for the system voltage adopted at 60 hertz, with an accuracy of

		plus or minus 2% of full scale or better. The unit shall be provided with a 3-position selector switch connected across RS, RT, and ST.
15		**HANDLED OPERATING MECHANISM**
		Operating handle for the main circuit breaker shall be designed with the operating handle fitted with the panel board of the control equipment. IT shall be used for operating the door and affecting the "ON_TRIP_OFF" operational of the breaker. It shall be designed such that the door cannot be opened when the breaker is at the "ON" position shall be provide with a door locking mechanism. A release screw shall be provided to permit the interlock to be canceled if it is necessary to open the door with breaker at the "ON" position. Dimension shall be as recommended by the Contractor.
16		**HOUR OPERATION COUNTER**
		Hour operation counter (elapsed time meter) shall be rated 220 volts. 60 hertz and suitable for panel mounting. Counter shall have six (6) digits hour register, the last digit of which shall indicate tenths of an hour. Hour operation counter shall have a square dust-resistant case of 65mm each side. Counter shall be non-resetting type.
17		**SELECTOR SWITCHES**
		Three-position selector switch, where required, shall have three operating positions: manual, off and automatic. Rating of selector switches shall be 220 volts, 60 cps or 48 volts DC and with a current type of load connected. They shall be of thumb –operated pointed type.
18		**PUSH-BUTTONS UNITS**
		Push-buttons units shall be standard-duty type, with silver momentary contact-type provided with springs to insure return to their original position. Ratings of push-button unit shall be 230 volts, 60 cps or 48 volts DC with a current capacity suitable for the type of load connected in series with them. Push-button unit shall be concave shaped with a minimum diameter of 20mm. Text printed in front of push-button shall indicate its function.
19		**PILOT LAMPS/INDICATORS**
		Pilot lamps shall be rated 220 volts, 60 cps or 48 volts DC as required by their application. They shall be clear–glass incandescent type. All pilot lamp indicators shall be designed for front mounting and of a square, round or rectangular type. Text printed on the face of the lamps

		shall indicate the function of the lamp. Changing of the lamp shall be from the front.
20		**NAMEPLATES**
		Name plates shall be of hard plastic material at least 2 mm thick. Words as indicated on the plans shall be etched on nameplates in white on a black background. Letter s shall be easily readable and in no instance smaller than 10 mm in height. Nameplates shall be affixed for control panel by means of flat head screws or glued on.
21		**FUNGUS CONTROL FOR ELECTRICAL COMPONENTS**
		Electrical equipment shall be treated to resist fungus and moisture as follows :
	a.	Current carrying components such as switches, fuses and contact shall not be treated. Other materials and components, which are inherently fungus-resistant or are protected by hermetic sealing also, need not be treated.
	b.	Circuit elements not covered above and which have a temperature rise of not more than 24˚C (75˚F) when operating at full loads shall be coated with fungus-resistant varnish. Fungus resistant varnish shall consist paraphynol formaldehyde resin in combination with tung oil in suitable salient, made fungistatic by the addition of not less than 7 to 8 percent salicy-talinide, suitable for the overall treatment of assembled electronic communication, and associated electrical equipment and certain component sub-assembly, to prevent fungus growth. The method of treatment shall be accordance with the manufacturer's advice and recommendations. Circuit elements include, but not limited to cable, wire, switchboards, panel boards, terminal and junction boxes, capacitors and coil.
22		**AUXILIARY PROTECTIVE DEVICES**
		The supplier shall furnish and install all auxiliary motor protective devices intended for their application as shown on the Drawings and/or as specified herein.

A1. GSM-controlled/Variable Frequency Drive (VFD) Motor Controller for 40 Hp, 460 V

1		The pumping station shall be upgrade into constant pressure system Variable Frequency Dial (VFD) and pressure transducer as feedback signal and shall be controlled and monitored remotely thru mobile phones

		using Short Message Service (SMS) system complete with other electrical /electronic accessories for the proper completion and operation of the system. The supplier shall be an authorized distributor which has an accomplished project of GSM-controlled VFD. Prior to installation the Contractor shall conduct VFD and GSM controller demo as simulation or actual site demo on one of the existing Pump Station of the Owner to check the functionality of the products to be installed. Delivery, installation and commissioning shall be done after approval of the brochures and shop drawings of the LWUA and PWD Engineers.
2		The GSM-controlled VFD shall be pre-wired in a walled mounted, powder coated, indoor type metal enclosure with the following main components and specifications:
	a.	1 unit Variable frequency drive ; 40 Hp, 460 Vac, 3 phase, up to 400 HZ output frequency; programmable overload protection; built-in PID control and energy saving function; IP20 rated; CE, UL, c-UL & C-tick global approved standards.
	b.	1 unit VFD main disconnect switch, breaker type.
	c.	1 set GSM/SMS controller, complete with programmable logic controller, operator graphic panel display, modem and antenna. The GSM/SMS controller shall be connected to GSM network service provider at the option of the PWD.
	d.	1 set GSM controller configuration software and transfer cable to (PC to controller).
3		Configuration of the GSM controller to meet the following operation and system requirements:
	a.	The operator display panel shall have graphical representation of the actual pumping station set-up showing **pump status, current target pressure, actual system pressure, kilowatt-hour consumption and flow metering** (note: kw-hr & flow metering devices are for future installations, the controller shall be ready to link these devices). I shall be capable of indicating alpha numeric alarm messages and historical graphical trending for system pressure and motor speed.
	b.	The GSM/SMS controller shall be used as data logger and supports Micro SD card for data storage and additional memory requirements. All data table shall be downloaded to PC in excel file format. Communication cables and software shall be included in the offer.

	c.	Fully programmable pump operation scheduling (operating time can be changed by the authorized operation via SMS and at a local display panel).
	d.	Remote control using SMS for VFD start/stop command and changing target pressure.
	e.	System monitoring via SMS that includes VFD that includes actual VFD status (running, stopped or tripped) and actual system pressure.
	f.	Alarm notification via SMS that includes VFD tripped, high or low pressure alarms and well low level alarm.
	g.	Available pulse input for flow monitoring.
	h.	Have minimum of three (3) mobile phone numbers that can communicate on this controller. These numbers can be edited, deleted and saved on the operator display panel.

A2. Automatic Transfer Switch Technical Specifications and Function Description

1	ATS Type	Molded Case Circuit Breaker
2	Actuator Type	Motorized
3	Ampere Rating	150 A
4	Rated Voltage	460 Vac
5	Number of Phase	3 Phase, 3 wire
6	Rated Frequency	60 Hz
7	Control Voltage	230 Vac
8	Enclosure Rating	Metal Enclosure, NEMA 3
9	Time Delay, Normal to Emergency	Provide time delay when transferring from normal power source to the generator power source. Adjustable time from 1 second to 60 minutes

10	Time Delay, Engine Start	Provide time delay initiation of the generator engine start circuit in order to override momentary power outages or voltage fluctuations of the normal power source. Adjustable time from 1 second to 60 minutes.
11	Time Delay, Emergency to Normal	Provide delay transfer from generator power source to the normal power source to permit stabilization of the normal power source before retransfer is made. Adjustable time from 1 second to 60 minutes.
12	Time Delay, Engine Cool Down	Provide delay to permit the generator to continue to run unloaded after retransfer to normal has occurred. Adjustable time from 1 second to 60 minutes.
13	Source Indication	Provide pilot lights to indicate available power source (Normal or Generator)
14	Maintenance Selector Switch	Provide selector switch (Manual/Off/Auto) operation, which can disconnect the control power allowing testing of logic circuitry without initiating load transfer.
15	Test Selector Switch	Provide selector switch (Test On/Off) operation, which can simulate a loss of normal power source, causing engine to start and initiate a load transfer to generator power source.
16	Three Phase Under Voltage Sensing Relay	Provide three-phase voltage sensing for under voltage adjustable up to 20%.
17	Automatic Pump Start	Provide control logic circuitry for automatic pump start after each successful transfer from normal power source to generator source and vice versa.
18	Electrical Interlock	Provide electrical interlock to prevent accidental activation of any power source when the other source is actively in operation.

A3. Distribution Transformers and Pressure Transducers

1		**PRESSURE TRANSDUCERS**	
	a.	Provide gauge pressure transducers as shown on the plans. Pressure transducer shall be an electronic type with linear with linear output and shall have an accuracy of ±0.2% of the calibrated span.	
	b.	Transducer shall have 4-20 mA output, span of 0-100 psi and a range of 0 to 100 psi. Operating temp. is -40 to 125 and power supply	
	c.	Wetted parts shall be SUS3161. Process connection shall be ½" NPT.	
	d.	All required accessories for the programming and configuration shall also be provided with the unit. The unit shall have a digital indicator with the range setting switch. The unit shall be capable to operate 24 VCD power supply. All electrical cables shall be of adequate size and type shall be provided with the unit. Experts or Technicians to supervise installation, testing of the item shall be made present by the Supplier during the commissioning of the unit. The transmitter shall be in environmental protection IP65/NEMA 4X. The flow meter shall manufactured by "Yokugawa", "Endress+Hauser, or approved equivalent.	
	e.	Enclosure shall be 316 Stainless Steel, IP65	
2		**DISTRIBUTION TRANSFORMERS**	
	a.	The transformers shall be brand new oil immersed, self-cooled, double bushing pole mounted-type with top changer, and has the following specifications:	
		No. of units	3
		KVA rating	25
		Primary Voltage, KV	7620/13200Y
		Secondary Voltage	230/460
		Frequency, HZ	60
		Turn Ratio Tolerance, % (tap 3)	15.833%

		No load losses	28
		Full-load losses	105
		Efficiency	98.95%
		Notes: 1. The units shall conform to the Local Power Cooperative (SOCOTECO II) maximum allowable cooper and core losses; 2. Expenses for the calibration/testing of meter and transformers and its protective devices shall be borne by the Contractor.	
	b.	Each transformer shall be furnished with 2-no-load manual winding taps at 2 ½% above and below normal voltages. It shall have grounding pads located diagonally on opposite corners of the tank base, mounting lugs of transformer pole mounting bracket cluster. The core and winding of the transformer shall be designed and constructed to compliance to all applicable standards prior to delivery, installation and acceptance. Required fuse cut- outs and arresters assemblies shall be supplied by the Contractor.	

A.4 Auxiliary Transformer

1		**AUXILIARY TRANSFORMER**	
	a.	Auxiliary Transformer shall be of suitable capacity as required by the system, rated 60 hertz, dry-type, two-winding and mounted inside the motor control enclosure as specified in the plan. Auxiliary Transformer must be capable of maintaining a high degree of voltage regulation (not less than 95%) from no load full through the worst momentary inrush requirements of the control components, lighting and auxiliary power. It shall have insulation good for 80 deg. C rise over an ambient of and a hot spot temperature of 40 deg. C and 150 deg. C respectively with a BIL of 10KV. Wiring terminations shall be easily accessible. Control transformer shall be manufactured in accordance with US NEMA or IEC Standards.	
		Capacity/Rating	5 KVA
		Primary Voltage	460 V
		Secondary Voltage	230 V
		Phase	Single Phase

B. PUMPING EQUIPMENTS RELATED ACCESSORIES

1.		**SCOPE AND LIMIT OF CONTRACT**
	a.	The scope of work shall be supply, delivery and installation and commissioning of one (1) unit of submersible pump, motor assembly, column pipes, discharges line fittings, submersible cable and civil work i.e., pump foundation, and pipe supports as shown on the drawings. All equipments to be delivered shall be brand new units.
2.		**CONDITIONS**
		The scope of work shall be supply, delivery and installation of one (1) unit of submersible pump and related accessories to PWD.
		The Supplier shall be responsible for the proper installation of the supplied pump unit.
		Prior to delivery and installation, the Supplier shall inform /invite LWUA engineer/s and at least two (2) PWD representatives to conduct laboratory testing on the pumping equipment to ensure conformance with the design parameters. All transportation, laboratory expenses and other incidental expenses shall be borne by the Contactor.
		In case the unit failed to pass the laboratory testing, the Supplier may make necessary corrections/changes to replace the unit without cost to the owner/PWD.
		The Supplier shall install the pump within sixty (60) days after signing/receipt of Purchase Order (PO) and Notice of Proceed (NTP). The 60 day time frame shall be allotted in order to check the proper alignment of the pump-motor assembly and make necessary corrections of both mechanical and electrical and electrical failures found during installation and construction be spliced using a splicing kit (3M brand) in conformity with the Motor Hp rating. The Supplier shall inform the PWD measures and proper procedures on pump operation to guarantee a smooth and proper function of the newly installed unit.
		Field testing shall be made once the mounted unit is ready for operation and when both the PWD and Supplier have finished their scopes of work on the installed unit LWUA engineers shall conduct field testing with the presence of Supplier's representative and PWD.
		In case the pump failed during field testing, the Supplier shall make necessary corrections, repair or replace the unit without cost to the Owner.

		All incidental expenses including the pulling out and transporting of the pump unit shall be borne by the Supplier.	
		In case of delay, the supplier shall then be subjected to Liquidated Damage (LD) under prevailing law until the unit has been tested/accepted.	
		Computation of the said LD shall conform to the provisions of RA 9184.	
3		**SUBMERSIBLE PUMP (OPERATING REQUIREMENTS)**	
		Number of Units	1
		Minimum Capacity at designed Head, lps (Gpm)	50 (792)
		Designed Head TDH, m(ft)	38 (125)
		Minimum Pump Laboratory Efficiency at design head (exclusive of pump column friction), percent	72%
		Location of pump suction strainer, m(ft)	50
		Design Speed	3400-3600
		Maximum Diameter of motor/pump bowl. Mm(in.)	200 (8)
		Size of existing/installed column pipe mm(in.), Sch.40 steel pipe	150 (6)
		Pipe Reducer (connecting pump and riser pipe)	Stainless pipe (schedule 40)
		Impeller Type	Semi-open/Enclosed
		Pump Shaft Type	18-8 Stainless Steel
		Diameter of Pump Bearing	At Least 2.50 times the Diameter of shaft
		Pump Bowl Casing	Stainless Steel

4		**SUBMERSIBLE MOTOR**	
		Motor Rating, Hp (KW):	40 (29.84)
		Frequency	60
		Rated Voltage (Volts)	460
		Phase	3
		Type of Submersible Cable	3C- Flat cable
		Service Factor	1.15
		Rated Current	52
		Rated Current (S.F.)	77.5
		Power Factor (S.F.)	0.83
		Power Factor (4/4)	0.80
		Efficiency (S.F.)	82.5%
		Efficiency (4/4)	83%
		Design Speed	3600 RPM
		Winding Wire	Max temp. NEMA class 200
		Resin system	Anti-track self-healing
		Windings	Hermetically-sealed
		Water-bloc lead	Removable
		Flange design	Double
		Shell	Stainless Steel
		Shaft	Splined Stainless Steel

		Thrust bearing	Kingsbury-type water lubricated
		Diaphragm	Pressure equalizing
		Slinger	Sand Fighter
		Lead wire configurations	3
		Bar rotor.	Copper
5		**FIRE EXTINGUISHER**	
		The Supplier shall furnish and install a fire extinguisher inside the pump house at the most accessible place as determined by the Engineer. The fire extinguishers shall be of liquid type ABC capable of extinguishing fire caused by ordinary combustible flammable liquid and electric equipment. It shall have discharge range of 20 ft.	
6		**SLLEVE-TYPE COUPLING (with harness set)**	
		The contractor shall furnish and install two (2) units of 150 mm (6 in.) dia. Sleeve-type coupling as shown on the drawings. The sleeve-type coupling shall be Smith Blair, Style 411or Style 412, equivalent Styles manufactured by Dresser, or approved equal. Coupling shall be of steel bolts, and shall be of sizes to fit the pipe and fitting as shown. The middle ring shall not be less than 6 mm (1/4 in) and 400 mm (16 in) long for long-sleeve couplings. Bolts for exposed coupling shall be hot-dipped galvanized steel bolts as shown on the drawings.	
7		**PRESSURE GAGES (Main Line and booster pump water line)**	
		The pressure gages shall have a 100mm (4 in) face diameter, 6 mm (1/4 in) threaded connection. The gages shall have a pressure range from 0 to 200 psi unless otherwise specified. The pressure elements of the gage shall be protected against excessive pulsation and surges by external pressure snubbers. The pressure gage shall be of "ASCHROFT" or approved equal.	
8		**MANOMETER**	
		The manometer shall be made of 10 mm transparent plastic tubing mounted on a 25mm x 50mm kiln dried wooden frame as shown on the drawings. The wooden frame shall be painted in white and shall have direct reading scale calibrated manometer assembly shall be bolt connected with a 10 mm x 50 mm steel plate welded at the orifice test as shown on the Drawings.	

9		**CHECK VALVE**
		The Contractor shall furnish and install a 150 mm (6nin) dia. swing type flanged-end check valve at the main discharge line as shown on the drawings. The valve shall be provided with an outside-lever-and weight located at the stainless steel swing. The valve shall be designed for a minimum water working pressures of 1.0 Mpa (150 psi), and shall have bronze gate rings and seat rings and type 18-8 stainless steel hinge pins. The check valves shall be designed so that disc and body seat may be easily removed without removing valve from the line. The valve shall be provided with coating for corrosion protection. Check valve shall be of AVK brand or approved equal.
10		**BUTTERFLY VALVE**
		The Contractor shall furnish and install two (2)-150 mm (6 in.) dia. butterfly valve with hand wheel for the main discharge and test line as shown on the drawings. The valve shall be new, of current manufacture, AVK brand, or approved equal.

C. 125 KVA DIESEL GENERATOR

1		**SCOPE/LIMIT OF CONTRACT**
1.1		The scope work shall be supply, delivery and installation and testing of one (1) unit of brand new diesel generator set, 125 KVA, silent-type, complete with accessories and miscellaneous equipment as specified.
1.2		Electrical conduits from Gen-set to Automatic Transfer Switch.
2		**CONDITIONS**
2.1		The scope of work shall be supply, delivery and installation of one (1) unit of brand new diesel generator set, 125 KVA, silent-type, and related accessories to Polomolok Water District (PWD).
2.2		The Supplier shall be responsible for the proper installation of the supplied gen-set.
2.3		The supplier shall install the gen-set with in sixty (60) days after signing/receipt of Purchase Order (PO) and Notice to Proceed. The said time frame shall be allotted to check construction/installation and make necessary corrections. The supplier shall instruct PWD measures/procedures on the proper operation to guarantee a smooth and efficient function of the unit.

2.4		Field testing/inspection shall be made on the installed unit to insure conformance with the specifications.
2.5		In case the gen-set failed in the test, the Supplier shall correct/check or replace the unit without cost to the owner (PWD) including all incident expense incurred.
3		**GENERATOR SET**
3.1		General – The generator set shall be directly coupled mounted on a single steel sub base, complete with all necessary engine and generator accessories, ready for operation, manually push-bottom/key start type, related for standby power supply under conditions specified herein. The complete diesel engine generator set shall be free from critical and torsional vibration within the operating speed range.
3.2		**TEST REQUIREMENTS**
		The diesel generating set shall be tested to determine whether the equipment has been properly assembled, aligned, adjusted and connected. All incidental expenses relative to the testing shall be borne entirely by the Contractor.
3.2.1		Laboratory Test – The unit shall be tested under varying loads with guard and exhaust system in place. Test shall include the following:
	a.	Single- step load pick -up
	b.	Transient and steady- stage governing
	c.	Safety shutdown device testing
	d.	Voltage regulation
	e.	Related power
	f.	Maximum power
3.2.2		**ON-SITE TEST**
	a.	Checking of fuel and lubrication for conformity with the manufacturer's recommendation, under the environmental conditions present and expected.

	b.	Accessories that normally function while the set is standing by shall be checked prior to cranking the engine.
	c.	Start-up under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during running, normal and emergency line to line voltage and phase rotation.
	d.	Engine coolant temperature, oil pressure and battery charge level along with generator voltage, amperes and frequency shall be monitored throughout the test.
3.3		**DIESEL ENGINE DRIVE**
		The engine shall of the water cooled, heavy duty, 4-cycle naturally aspirated/turbocharged, industrial type equipped with 12/24 volt DC solenoid engaged electric motor starter and shall develop the full continuous horsepower required by the alternator using diesel fuel when operating at a speed not exceeding 1800 rpm. The engine shall have alumni pistons, removable type cylinder sleeves, and heavy-duty replaceable precisions type bearings and equipped with vane type oil pump, by pass oil filter, oil level indicator, a residential type silencer exhaust system.
3.3.1		Starter – The engine shall be equipped with 12/24 volts DC solenoid engaged electric motor starter.
3.3.2		Lubricating System – The Lubricating system shall have a vane type oil pump, a by-pass oil filter, oil pressure gauge and oil level indicator.
3.3.3		Exhaust System – The engine shall be equipped with a residential silencer, sized in accordance with the engine manufacturer's recommendation. Maximum backpressure measured at the exhaust header shall not be more than350 mm (14 in) of water column. The silencer shall be fabricated of carbon steel designed for 1000 F service and shall be shop painted with silicon base high heat resisting aluminum paint. The silencer shall be installed with Flexible metal expansion section of stainless steel and not less than 450 mm (18 in) in length as shown on the Drawings and shall be designed together with all pipes, bend, bolts, nuts, and clamps for temperature of not less than 1000 F. The entire exhaust assembly excluding expansion joint shall be insulated with 250 mm layers of magnesium insulation with lugging as shown on the drawings.
3.3.4		Fuel System – The fuel system shall include an injection pump, engine fuel transfer pump, flexible fuel connections, fuel filters and shut –off valves.

3.3.5		Fuel Oil Storage Tank – The fuel tank shall have a capacity of at least 8 hours of continuous operation and shall come complete with all accessories. Inside surface of the tank shall be picked or sandblasted to be clean of all dust and foreign matter and lightly coated with oil. All tank openings shall be sealed prior to shipping.
3.3.6		Fuel Level Gauge – The Contractor shall furnish and install level gauge on the fuel oil tank for visual indication of the amount of fuel remaining on the tank. The gauge shall be either clear glass or plastic materials resistant to normal diesel fuel corrosion. The level gauge shall be provided with valves on both ends for isolation during routine maintenance and replacements. The gauge shall be of appropriate length with graduation calibrated in both in liters and percentage of the total fuel tank capacity.
3.3.7		Safety Switches – The engine shall be equipped with safety switch which will cut-off the engine on low oil pressure and high water temperature.
3.3.8		Battery – There shall be installed a battery complete with cables for supplying 12/24 volts DC power to the engine. The battery shall have the necessary ampere-hour rating for cranking the engine for 10 minutes.
3.3.9		Battery Charger – The battery charger shall be 12/24 volts DC output, 230 volts AC input. It shall have an ampere output sufficient to recharge the battery in 4 hours when the battery is 50% discharge. The charger shall incorporated adjustable float and equalizing voltage potentiometer. A current limit signal shall be supplied in the control circuit from the current sensing resistor. It shall be of the full wave rectifier type and shall include all the required standard components.
3.4		**MISCELLANEOUS EQUIPMENT**
		The engine shall be equipped with the following:
	a.	Intake air cleaner.
	b.	Safety switches which cut off the engine on low oil pressure and high water temperature.
	c.	One (1) set of original oil lube filters and fuel filters. In addition, the Contractor shall provide three (3) sets of original spare oil lube and fuel filters.
	d.	Battery and Charger complete with cables.
3.5		**ALTERNATOR**

3.5.1		The alternator shall be rated for standby operation at 125 KVA (min.) 0.80 PF, 3-phase, 60 cps, 1800 rpm, 460 volts, 50 C ambient temperature at 75M a.s.l. and shall be directly coupled to the engine. The alternator shall be salient-pole; 12-leads reconnectible self-ventilated of drip-proof construction with a mortisseur and skewed stator for smooth voltage waveform. It shall be single bearing, synchronous type standards. The insulation shall meet the NEMA MG 1-22.40 for class H insulation and shall be abrasion detritions per MIL 1-24092. Temperature rise of the rotor shall be limited to NEMA class F ratings.
3.5.2		The excitation system shall be of brushless construction controlled by a solid-state voltage regulator capable of maintaining voltage within +/-2% at any constant load from 0% to 100% of the rating. The regulator must be isolated to prevent tracking when connector to SCR loads, and provide individual adjustments for voltage range, stability and volts-per-hertz operation. The solid-state regulator module shall be shock mounted and epoxy encapsulated for protection against vibration and atmospheric deterioration.
3.5.3		Upon one-step application of any load up to 100% of the rated load at 0, 80 PF the voltage dip shall not exceed 20% and shall recover to +/-2% of the rated voltage within one (1) second.
3.5.4		Alternator shall be capable of sustaining an overload capacity of 300% full load current at zero power factors for a period of ten seconds without damage to it. Output voltage recovery after sudden application or rejection rated load shall be within 0.3 second.
3.5.5		A resettable line current sensing circuit breaker with inverse time versus current response shall be furnished which protects the generator from damage due to its own high current capability. This breaker shall not trip within ten seconds specified above to allow selective tripping of downstream fuses or circuit breaker under fault condition. This breaker shall not trip without ten seconds specified above to allow selective tripping of downstream fuse or circuit breaker under a fault condition. This breaker shall not automatically reset preventing restoration of voltage if maintenance is being performed. Field current-sending breaker will not be acceptable.
3.5.6		Alternator shall be open, drip-proof construction with an over-all efficiency of at least 85% at full load.
3.5.7		Alternator windings and electrical components shall be tropicalized.

3.6		**GENERAL CONTROL PANEL**
3.6.1		General – A set mounted alternator/engine control panel shall be supplied with the generator set. The control panel shall be vibration-isolated, dead front construction, 14 gauge steel NEMA 1 enclosure. Cabling and control wiring shall be either side or bottom.
3.6.2		Instrument – Panel shall contain, but not limited to the following equipment.
	a.	Circuit breaker, thermal-magnetic, industrial type rating as required.
	b.	1 voltmeter with phase selector switch.
	c.	1 ammeter with phase selector switch and current transformers
	d.	1 frequency meter
	e.	1 hour operation counter
	f.	Panel illumination lights and switches
	g.	Indicating relays and fault indicator lamps for low oil pressure, high engine temperature and over speed.
	h.	Engine ammeter
	i.	Engine lube oil pressure gauge
	j.	Engine water temperature gauge
	k.	Tachometer
3.6.3		Operating Switches and Push buttons shall include
	a.	Manual start/stop push buttons/key switch
	b.	Emergency Stop Button
	c.	Control Lamp Test
	d.	Selector Switch

	e.	Test Switch
3.6.4		Operation Controls – During operation, the generating se t shall be monitored for the following disturbances:
	a.	Loss of lube-oil pressure
	b.	Excess engine temperature
	c.	Alternator overload
	d.	Alternator short circuit
	e.	Over speed
		Should any of the faults listed under (a) to (c) arise, the individual signal relay installed for the special task shall respond. To avoid lasting damage if operation were to continue, the generating set shall be automatically shut-off and a subsequently new starting effort shall be blocked and corresponding fault indicator lamp shall be on.
3.6.5		At protracted overloading of the alternator, the thermal over current release with time delay shall cause the alternator main circuit breaker to trip. The set shall continue in operation unloaded to obtain cooling of the alternator.
3.6.6		In case of leader short circuit during an emergency supply operation, the alternator shall immediately be disconnected from the fault location by means of the electromagnetic trip relay of the main circuit breaker.
3.7		**AUTOMATIC TRANSFER SWITCH (BREAKER TYPE)**
		An Automatic Transfer Switch (ATS), 3-phase, 60 hertz, 3 poles with solid neutral for voltage specified herein and for the current rating indicated on the drawings and as per specified specifications is to be provided.
3.8		**WARRANTY**
		All equipment stated herein shall be warranted for a period of one (1) year of trouble-free operation under normal operating condition. The supplier shall replace damaged parts including services.

37.0 AS BUILT DRAWINGS

Before the acceptance of the work, Contractor shall furnish at his own expense and submit to Polomolok Water District Engineer as built drawings indicating in all details the actual construction or as built conditions of the work in this contract, As built plans shall be, Two (2) sets and the electronic -copy in CAD file.

Section VII. Drawings

Item No.	Title	Sheet No.
1.	Project Title and Location	Refer to Cover Page 1
2.	Location Map, Vicinity Map & General Notes	Refer to Cover Page 2
3.	General Project Layout 1-3	Refer to Cover Page 3,4 &5
4.	Distribution Plan, Road Cross-Sections and Interconnection Details	Refer to: CD-02-001, CD-02-002, CD-02-004 to CD-02-007, CD-02-CD-02-009 to CD-02-011, CD-02-013 to CD-02-020, CD-02-022 to CD-02-026
5.	Removal and Replacement of Existing PCCP and Concrete Restoration	Refer to CD-02-003
6.	Pipe Crossing @ Dagoc Creek	Refer to CD-02-008
7.	Polomolok South Bridge Crossing	Refer to CD-02-012
8.	Distribution Plan, Road Cross-Sections and Pipe Bridge Crossing Details	Refer to CD-02-021
9.	Typical PRV Assembly Details	Refer to CD-02-027
10.	Manhole Cover Details	Refer to CD-02-027
11.	Butterfly Valve Chamber Details	Refer to CD-02-028
12.	Test Pit Chamber Details	Refer to CD-02-028
13.	Construction of Pump House (Magalong) and Perimeter fence (PS #10)	Refer to Plan PS#10
	Perspective, Site Development Plan, Vicinity Map	Refer to GA-1 of Plan PS#10
	Pump House Floor Plan, Elevation, Side Elevation, Left Side Elevation, Transverse Section & Longitudinal Section	Refer to PH-1 of Plan PS#10
	Pump House Foundation Plan, Wall Footing Detail, Column Footing Detail, Conventional Beam Detail, Schedule of Column, Schedule of Beam	Refer to PH-2 of Plan PS#10
	Pump House Roof Framing Plan, Roof Plan, Truss Diagram, Parapet & Canopy Detail & Gutter Detail	Refer to PH-3 of Plan PS#10

Item No.	Title	Sheet No.
	Genset Shelter Floor Plan, Front Elevation, Rear Elevation & Typical Side Elevation	Refer to GS-1 of Plan PS#10
	Genset Shelter Foundation Plan, Wall Footing Detail, Pedestal Detail &Schedule of Pedestal	Refer to GS-2 of Plan PS#10
	Genset Shelter Roofing Plan, Roof Plan, Rafter Detail & Rear Wall Detail	Refer to GS-3 of Plan PS#10
	Perimeter Fence Layout	Refer to PF-1 of Plan PS#10
	Fence Front Elevation & Rear Elevation	Refer to PF-2 of Plan PS#10
	Fence Right Side Elevation & Left Side Elevation	Refer to PF-3 of Plan PS#10
	Fence Foundation Plan	Refer to PF-4 of Plan PS#10
	Fence Column/Footing Detail	Refer to PF-5 of Plan PS#10
	Fence Wall Footing Detail, Typical Beam/Tie Beam Detail, Schedule of Column, Schedule of Fence Beam	Refer to PF-6 of Plan PS#10
	Gate Plan, Gate Elevation, Gate Post/Footing Detail	Refer to PF-7 of Plan PS#10
	Plumbing Layout	Refer to PL-1 of Plan PS#10
	Plumbing Plan, Plumbing Line Elevation, Test Chamber detail and Flower Box detail	Refer to PL-2 of Plan PS#10
	Test Support Detail, Pressure Switch Gauge Assembly, Pump Test Line, Orifice and Manometer Detail, Air Relief Valve, Installation of Hose Bibb	Refer to PL-3 of Plan PS#10
	Submersible Pump Base Detail, Schematic Diagram Chlorination piping	Refer to PL-4 of Plan PS#10
	Electrical Layout, Service Pedestal Detail, Yard Light Detail	Refer to EL-1 of Plan PS#10
	Lighting Layout, Power Layout, Electrical Legend	Refer to EL-2 of Plan PS#10

Item No.	Title	Sheet No.
	Single Line Riser Diagram	Refer to EL-3 of Plan PS#10
	Panel Schedule and Computations	Refer to EL-4 of Plan PS#10
	Control Panel Details, General Notes, Scope of Electro- Mechanical	Refer to EL-5 of Plan PS#10
16.	Construction of Pump House (Mabacquiao) and Perimeter fence (PS #11)	Refer to Plan PS#11
	Perspective, Site Development Plan, Vicinity Map	Refer to GA-1 of Plan PS#11
	Pump House Floor Plan, Elevation, Side Elevation, Left Side Elevation, Transverse Section & Longitudinal Section	Refer to PH-1 of Plan PS#11
	Pump House Foundation Plan, Wall Footing Detail, Column Footing Detail, Conventional Beam Detail, Schedule of Column, Schedule of Beam	Refer to PH-2 of Plan PS#11
	Pump House Roof Framing Plan, Roof Plan, Truss Diagram, Parapet & Canopy Detail & Gutter Detail	Refer to PH-3 of Plan PS#11
	Genset Shelter Floor Plan, Front Elevation, Rear Elevation & Typical Side Elevation	Refer to GS-1 of Plan PS#11
	Genset Shelter Foundation Plan, Wall Footing Detail, Pedestal Detail &Schedule of Pedestal	Refer to GS-2 of Plan PS#11
	Genset Shelter Roofing Plan, Roof Plan, Rafter Detail & Rear Wall Detail	Refer to GS-3 of Plan PS#11
	Perimeter Fence Layout	Refer to PF-1 of Plan PS#11
	Fence Front Elevation & Rear Elevation	Refer to PF-2 of Plan PS#11
	Fence Right Side Elevation & Left Side Elevation	Refer to PF-3 of Plan PS#11
	Fence Foundation Plan	Refer to PF-4 of Plan PS#11
	Fence Column/Footing Detail	Refer to PF-5 of Plan PS#11

Item No.	Title	Sheet No.
	Fence Wall Footing Detail, Typical Beam/Tie Beam Detail, Schedule of Column, Schedule of Fence Beam	Refer to PF-6 of Plan PS#11
17.	Plumbing Layout	Refer to PL-1 of Plan PS#11
18.	Plumbing Plan, Plumbing Line Elevation, Test Chamber detail and Flower Box detail	Refer to PL-2 of Plan PS#11
19.	Test Support Detail, Pressure Switch Gauge Assembly, Pump Test Line, Orifice and Manometer Detail, Air Relief Valve, Installation of Hose Bibb	Refer to PL-3 of Plan PS#11
20.	Submersible Pump Base Detail, Schematic Diagram Chlorination piping	Refer to PL-4 of Plan PS#11
21.	Electrical Layout, Service Pedestal Detail, Yard Light Detail	Refer to EL-1 of Plan PS#11
22.	Lighting Layout, Power Layout, Electrical Legend	Refer to EL-2 of Plan PS#11
23.	Single Line Riser Diagram	Refer to EL-3 of Plan PS#11
24.	Panel Schedule and Computations	Refer to EL-4 of Plan PS#11
25.	Control Panel Details, General Notes, Scope of Electro- Mechanical	Refer to EL-5 of Plan PS#11

Section VIII. Bill of Quantities

Bill of Quantities

WORK ITEM	UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
I. UNIT BID ITEMS FOR PIPELINES AND RELATED CIVIL WORKS NOTE: Quantities Estimated are for the purposes of comparing bids. Payment will be based on actual quantities furnished, installed or constructed.				
IA. PIPELINES – Furnish and install pipes complete including joints, fittings, and warning/detection tapes, perform excavation of any type of soil excluding rock/boulders/hard limestone with pipe cover of 1.2 meters or less, measured to existing ground surface, sump pumping, pipe supports, thrust blocks, backfilling using suitable materials from the trench, disposal of surplus materials where directed, compaction and hydrotesting in accordance with Specifications and Drawings. The cost shall include provision and maintaining enough safety barricades, bollards, warning signs/lights and steel plates to cover open trenches when required and in accordance with the Plans and Technical Specifications. Note 1: Quantity = length in meters, **excluding** length of valves and assemblies under Items B Note 2: Thrust block is not required for welded steel pipes. Note 3: If below-ground laying is not suitable to actual field conditions, above-ground pipe installation shall be used. Note 4: All other interconnections not included in Lump Sum Bid Items for Interconnection shall be included under unit bid items for pipelines.				
A.1 Transmission Pipelines (SWSP A-139 Grade SS-400 B&S CLCC)				
1. 350 mm (14”) diameter x 6m x 4.7mm steel pipes	Ln.m	3,915		
2. 300 mm (12”) diameter x 6m x 3.4mm steel pipes	Ln.m.	5,830		
1A.2 Distribution Pipelines (uPVC Pipes with Integrated Seal, Series 8)				
1. 200 mm (10”) diameter x 6m uPVC pipes	Ln.m.	1,600		
2. 150 mm (10”) diameter x 6m uPVC pipes	Ln.m	50		
Signature of Bidder: **Date:**				

	WORK ITEM	UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
IA.2 Disinfect all proposed pipelines as specified					
1.	350 mm (14”) diameter steel pipes	LS	1		
2.	300 mm (12”) diameter steel pipes	LS	1		
3.	200 mm (8”) diameter uPVC pipes	LS	1		
4.	150 mm (6’’) diameter uPVC pipes	LS	1		
ST-IA Sub-total for Pipelines					
IB. VALVES – Furnish and install gate or butterfly or pressure reducing valves complete with fittings on proposed pipelines with valve box cover, concrete pads and perform all necessary earthworks, backfill, compaction and disposal of excess materials in accordance with the Plans & Specifications. ***Note 1: Quantity = number of valves***					
IB.1 Gate Valves with flanges or combination flanges (Refer to details)					
1.	200 mm	LS	1		
2.	150 mm	LS	1		
3.	100 mm	LS	1		
IB.2 Butterfly Valves with flanges					
1.	350 mm Butterfly Valves with steel ring flanges	LS	1		
2.	300 mm Butterfly Valves with steel ring flanges	LS	1		
IB.3 Pressure Regulating Valves with Chamber (Refer to Detailed Plan for PRV)					
1.	150 mm diameter PRV Assembly w/ accessories	LS	1		

Signature of Bidder: **Date:**

WORK ITEM		UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
IB.4 Pressure Reducing Valves Assembly and Accessories with Flow Meters, Y-straight, ARV, Pressure gauges and PRV Chambers (Refer to Drawings)					
1.	200 mm diameter (8")	LS	1		
2.	150 mm diameter (6")	LS	1		
3.	100 mm diameter (4")	LS	1		
IB.4 Manholes and Chambers					
1.	Butterfly Valve Chamber	LS	1		
2.	Valve Boxes	LS	1		
3.	Test Pit Chamber (2m x2m x 2.5m depth)	LS	1		
ST-IB Sub Total for Gate Valves, Butterfly Valves, PRVs and Assembly, Valve Chambers and Boxes					

IC. INTERCONNECTIONS – Furnish all materials, labor, tools, and equipment necessary to interconnect pipes from the proposed pipelines and existing including installation of pipes, fittings, valves (if needed), thrust blocks, abutments, piers, coffering, and all other works including testing and disinfecting as specified and shown on the Drawings. Refer to the Drawings for limit of Lump Sum Bid.

IC.1	Interconnections	Unit	Qty	UNIT PRICE(PhP)	TOTAL PRICE (PhP)
	INTERCONNECTIONS	LS	1		
ST-IC Sub Total for Interconnection					

Signature of Bidder: **Date:**

WORK ITEM		UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
ID. PIPE CROSSING / SUPPORT – Furnish all materials, labor, tools, and equipment necessary to construct all pipe crossings of the proposed pipelines complete including installation of pipes, fittings, valves (if needed), thrust blocks, abutments, piers, coffering, and all other works including testing and disinfecting as specified and shown on the Drawings. Refer to the Drawings for limit of Lump Sum Bid.					
ID.1	**Canal Crossing 441 mm SSP (Crossing Summer light)**	LS	1		
ID.2	**Creek Crossing (South Polomolok Bridge)**	LS	1		
ID.3	**River Crossing (Matin-ao/Tateh)**	LS	1		
ID.4	**NH Way (ML) Crossing 200mm SSP**	LS	1		
ID.4	**Eroded Portion Pipe**				
	i. Fronting ML (300mm SSP – See Details)	LS	1		
	ii. Beside Monterey(300mm- See Details)	LS	1		
ID.5	**Highway Crossing (Refer to Details)**				
	i. Purok San Isidro (Installation of 1000mm RCCP – See Details)	LS	1		
ID.6	**RCCP Drainage Installation**				
	i. PS#10 RCCP 300mm	LS	1		
	ii. PS#11 RCCP 300mm	LS	1		
ST-ID Sub Total for Canal, Creek, River Crossing, Eroded Portion and Highway Crossing					

Signature of Bidder: **Date:**

WORK ITEM		UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
IE. REMOVAL OF EXISTING CONCRETE , STRUCTURE AND RESTORATION					
IE.1 PAVEMENT DEMOLITION – Furnish labor tools and equipment necessary to demolish pavement including the hauling and disposal of discard materials to approved dumpsite acceptable to the Engineer. The cost of cutting/sawing the pavement shall be included in the unit bid for pavement demolition.					
1.	Concrete Breaking and Disposal	LS	1		
IE.2 SURFACE RESTORATION – Furnish materials, labor, tools and equipment necessary to construct and/or restore pavement and/or structures demolished as specified and required in the Specifications. Cost for the supply and preparation of the base course when required shall be included in the unit bid price. Note: Payment will be based on the volume of concrete pavement restored regardless of the thickness of pavement(s) demolished. Computation of volume of restoration shall also consider the width in excess of the maximum allowable trench width. Thickness of base course and or sub-base shall not be included in the measurement.					
1.	Concrete Restoration	LS	1		
2.	Reinforcement Restoration (for demolished concrete w/ RSB)	LS	1		
3.	Base and Sub-base Preparation	LS	1		
ST-IE Sub-Total for Removal of Existing Concrete Pavement and Restoration and Installation of 1000mm RCP Encasement					
IF. POTHOLING EXCAVATIONS FOR INTERCONNECTIONS					
IF.1	**Potholing excavation for interconnection**	LS	1		
ST-IF Sub-Total for Test Pit Excavation and Construction of Sump Pit Chambers					
Signature of Bidder: **Date:**					

	WORK ITEM	UNIT	QTY	UNIT PRICE (PhP)	TOTAL PRICE (PhP)
IG.	**BEDDINGS**				
IG.1	**Sand Bedding/Backfill from Borrow Area** to be furnished and installed when ordered by the Engineer. (100% passing on IS Sieve 9.5mm)	LS	1		
ST-IG Sub-Total for Beddings					
IH.	**ROCK/BOULDER/HARD LIMESTONE EXCAVATION**				
IH.1	**Rock/Boulder/Hard Limestone Excavation** including breaking, excavation, removal/ disposal as specified in the LWUA Standard Technical Specifications or as ordered by PolWD Engineer.	LS	1		
ST-IH	**Sub-Total for Rock/Boulder/Limestone Excavation**				
Signature of Bidder:		**Date:**			
II	**THRUST BLOCKS AND ANCHOR**				
II.1	**Concrete Thrust Blocks** to be furnished and installed to all bends, valves, Tee's and other appurtenance as ordered by the PolWD Engineer in accordance with the Technical Specifications and/or as shown in the Drawings.	LS	1		
ST-II Sub-Total for Concrete Encasement/Blocks					
Signature of Bidder:		**Date:**			

SUMMARY FOR PART I - PRICES FOR PIPELINES AND RELATED CIVIL WORKS

			TOTAL PRICE (Pesos)
IA	**PIPELINES**		
IB	**VALVES**		
IC	**INTERCONNECTIONS**		
ID	**CANAL, CREEK, ERODED PORTION, RIVER AND HIGHWAY CROSSING**		
IE	**REMOVAL OF EXISTING CONCRETE , STRUCTURE AND RESTORATION**		
IF	**POTHOLING EXCAVATIONS FOR INTERCONNECTIONS**		
IG	**SAND BEDDINGS**		
IH	**ROCK/BOULDER/HARD LIMESTONE EXCAVATION**		
II	**THRUST BLOCKS AND ANCHOR**		
	TOTAL PART I CARRIED FORWARD TO BID PRICE SUMMARY		

Signature of Bidder: **Date:**

Pay Item No.	Description	Unit	Qty.	Unit Price (Pesos)	Total Amount (Pesos)
PART II – LUMP SUM BID ITEMS FOR CIVIL WORKS Note: Quantities estimated are for the purpose of comparing bids. Payments will be based on actual quantities furnished, installed or constructed.					
IIA	**STRUCTURES –** Furnish materials, labor, plant, tools, supplies, equipment to construct and complete the structures including pipelines, valves and fittings within the lump sum limits indicated on the Drawings, site developments, excavation, backfilling, fencing, disinfection, drainage, connection of pipelines and all necessary works including soil investigations at reservoir sites and pump house and generator set shelter and all necessary works as specified and as shown on the Drawings.				
IIA.1	**MABACQUIAO PUMPING STATION**				
1.	Construction of Pump House and Generator Set Shelter including painting, Electrical wirings & Fixtures, etc. (PS#11)	LS	1		
IIA.2	**MAGALONG PUMPING STATION**				
1.	Concrete Perimeter Fence, Construction of Pump House and Generator Set Shelter includes Electrical System and painting (PS #10)	LS	1		
ST-IIA Sub Total for Structures					
IIB SITE DEVELOPMENT					
IIB.1	Clearing and grabbing (PS#11)	LS	1		
IIB.2	Site development (PS# 10)	LS	1		
ST-IIB Sub Total for Site Development					
Signature of Bidder:			**Date:**		

SUMMARY FOR PART II – LUMP SUM BID ITEMS FOR CIVIL WORKS

			TOTAL PRICE (Pesos)
IIA	**STRUCTURES**		
IIB	**SITE DEVELOPMENT**		
	TOTAL PART II CARRIED FORWARD TO BID PRICE SUMMARY		

Signature of Bidder: **Date:**

Pay Item No.	Description	Unit	Qty.	Unit Price (Pesos)	Total Amount (Pesos)
PART III – LUMP SUM BID ITEMS FOR ELECTRO-MECHANICAL WORKS Note: Quantities estimated are for the purpose of comparing bids. Payments will be based on actual quantities furnished, installed or constructed.					
IIIA	**PUMPING FACILITIES – Furnish, install, test and commission electro-mechanical equipment such as submersible pump and electric motor set, generator set and accessories and all appurtenances as specified and as shown on the Drawings.**				
IIIA.1	**MABACQUIAO PUMPING STATION (PS #11)**				
	1-50 HP submersible pump and motor, electrical controls, cable and column pipe	LS	1		
	Discharge line, valve fittings, flow meter with civil works (pump foundation, pipe support, splash box, etc.)	LS	1		
IIIA.2	**MAGALONG PUMPING STATION (PS#10)**				
	1-100 HP submersible pump and motor, electrical controls, cable and column pipe	LS	1		
	Discharge line, valve fittings, flow meter with civil works (pump foundation, pipe support, splash box, etc.)	LS	1		
ST-IIIA Sub Total for Pumping Facilities					

Signature of Bidder: **Date:**

SUMMARY FOR PART III – LUMP SUM BID PRICE ITEMS FOR ELECTRO-MECHANICAL WORKS

			TOTAL PRICE (Pesos)
IIIA	**PUMPING FACILITIES**		
	TOTAL PART III CARRIED FORWARD TO BID PRICE SUMMARY		

Signature of Bidder: **Date:**

WORK ITEM		QTY	UNIT or LUMP SUM	TOTAL PRICE (PhP)
PART IV. SPECIAL ITEMS - The bidder shall complete the following forms by inserting the quantity and price amounts (in figures) for each in the space provided. The amount shall represent the true breakdown of the lump sum bid price indicated below. **Note:** Bid cost for this item shall be for the period of **one (1) year to accommodate any suspension period/time extension and/or contract closing period**.				
IVA	**CONTRACTOR'S TEMPORARY SITE FACILITIES, PROJECT ORGANIZATION, PROJECT ENGINEER'S OFFICE INCLUDING OFFICE SUPPLIES AND EQUIPMENT**			
1.	Contractor's Mobilization, Demobilization, Temporary Site Facilities Project Organization, Office Maintenance, Permits, Fees, Guarantees, Bonds, Insurances, etc.			
	Permits, Bonds and other government requirements	1	LS	
	Mobilization and demobilization	1	LS	
	Project Organization	1	LS	
	Temporary Site Facilities	1	LS	
	Occupational Safety and Health Program	1	LS	
ST-IVA Sub Total for General Requirements, Contractor's Temporary Site Facilities, Project Organization, Resource Movement, Etc.				
IVB	**PROVIDE AND MAINTAIN PROJECT ENGINEER'S OFFICE**			
1.	Provide and Maintain Project Engineer's Office (Contractor/PolWD) including computers, office equipment, supplies, etc. (See Appendix A)	1	LS	
ST-IVB Sub Total for General Requirements, Contractor's Temporary Site Facilities, Project Organization, Resource Movement, Etc.				

Signature of Bidder:			**Date:**	
WORK ITEM		**QTY**	**UNIT or LUMP SUM**	**TOTAL PRICE (PhP)**
IVC PROJECT BILLBOARDS: PROVIDE AND INSTALL FIVE (5) PROJECT SIGNS AND ONE (1) COA SIGN BOARD				
1.	Project Signs (5)	LS	1	
2.	COA Sign Board (1)	LS	1	
ST-IVC Sub Total for Project Billboards				
Signature of Bidder:			**Date:**	

SUMMARY FOR PART IV – SPECIAL ITEMS			
			TOTAL PRICE (Pesos)
IVA	**GENERAL REQUIREMENTS, CONTRACTOR'S TEMPORARY SITE FACILITIES, PROJECT ORGANIZATION, RESOURCE MOVEMENT, ETC.**		
IVB	**PROVIDE AND MAINTAIN PROJECT ENGINEER'S OFFICE**		
IVC	**PROJECT BILLBOARDS:** **PROVIDE AND INSTALL FIVE (5) PROJECT SIGNS AND ONE (1) COA SIGN BOARD**		
	TOTAL PART IV CARRIED FORWARD TO BID PRICE SUMMARY		

Signature of Bidder: **Date:**

TOTAL BID PRICE SUMMARY

	WORK ITEM	TOTAL PRICE (PHP)
PART 1	**PIPELINES AND RELATED CIVIL WORKS**	
PART II	**CIVIL WORKS**	
PART III	**ELECTRO-MECHANICAL WORKS**	
PART IV	**SPECIAL ITEMS**	
I. TOTAL OF PART I TO IV		
II. PROVISIONAL SUM		
TOTAL BIDPRICE (I + II)		
In words: _____ _____ _____ (___ _____)		

Signature of Bidder: _____ **Date:** _____

BREAKDOWN OF PRICES

The Bidder shall completely fill up the Bidder's Breakdown of the Unit Price and Lump Sum Bids herein below provided by inserting the amount in figures for each item in the space provided. The Breakdown shall be submitted together with and shall form part of the Bid Form. The amounts shall represent a true breakdown of the bid prices of the Unit Price and Lump Sum Bids shown in the Bid Form in Philippine Peso. These amounts will be used in preparing monthly estimates. All breakdown should be balanced and consistent with the bid amount in Section VIII – Bill of Quantities. An UNBALANCED BREAKDOWN WILL NOT BE ACCEPTABLE. The total amount indicated in the form below for each Unit Price and Lump Sum Bid Items must equal the bid price shown in the Bid Form.

UNIT PRICE BID ITEMS

I. PIPELINES AND RELATED CIVIL WORKS

IA. PIPELINES

The bidder shall complete the following form by inserting the price amount (in figures) for supply and installation of pipes up to hydro testing. Disinfection of pipes shall be paid as a separate pay item.

Bid Item	Unit Price (per LM) Materials			Unit Price Installation (per LM)			
	a/ Pipes	a/ Fittings	Others	Excavation	Laying/ Jointing	Backfilling, Compaction, Hydrotesting	Total Unit Price
Transmission Pipelines (SWSP A-139 Grade SS-400 B&S CLCC)							
350mm Ø x 6m x 4.7mm Thk							
300mm Ø x 6m x 3.4mm Thk							
Distribution Pipelines (uPVC Pipes with Integrated Fixed Seal, Series 8)							
200mm Ø							
150mm Ø							

Note: Others include detection tapes, thrust blocks, warning lights and steel plates, etc. Laying cost includes local transportation cost to the site. For steel or metal pipes warning tapes are required.

Signature and Official Stamp of Bidder: _____ Date:_____

The bidder shall complete the following form by inserting the price amounts (in figures) for the supply of materials and installation (**per unit cost**).

IB.1 GATE VALVES

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
200 mm Ø	*4 sets*			
150mm Ø	*11 sets*			
100mm Ø	*1 set*			

Note : a/ include fittings & other expenses such as taxes, clearance and handling up to the construction site.

IB.2 BUTTERFLY VALVES WITHFLANGES

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
350 mm Ø	*2 set*			
300mm Ø	*3 sets*			

Note : a/ include fittings & other expenses such as taxes, clearance and handling up to the construction site.

IB.3 PRESSURE REGULATION VALVES

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
150 mm Ø	*1 set*			

Note : a/ include fittings & other expenses such as taxes, clearance and handling up to The construction site.

Signature and Official Stamp of Bidder: _____ Date:_____

IB.4. PRESSURE REDUCING VALVE ASSEMBLY AND ACCESSORIES WITH FLOW METER, Y-STRAINERS, ARV, PRESSURE GAUGES AND PRV CONCRETE CHAMBERS

BID ITEM (1)	QTY (nos) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
200mm Ø				
200mm PRV Valve Assembly with accessories	*1 set*			
200mm Flow Meter	*1 unit*			
200mm Y - Strainer	*1 unit*			
Pressure Gauges	*1 pair*			
PRV Concrete Chamber	*1 unit*			
150mm Ø				
150mm PRV Valve Assembly with accessories	*5 set*			
150mm Flow Meter	*5 units*			
150mm Y - Strainer	*5 units*			
Pressure Gauges	*5 pairs*			
PRV Concrete Chamber	*5 units*			
100mm Ø				
100mm PRV Valve Assembly with accessories	*1 set*			

Signature and Official Stamp of Bidder: _____ Date:_____

BID ITEM (1)	QTY (nos) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
100mm Flow Meter	*1 unit*			
100mm Y - Strainer	*1 unit*			
Pressure Gauge s	*1 pair*			
PRV Concrete Chamber	*1 unit*			

Note : a/ includes fittings & other expenses such as taxes, clearance and handling up to the construction site.

IB.5 MANHOLES AND CHAMBERS

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
Butterfly Valve Chamber	*5 Units*			
Valve Boxes	*16 Units*			
Test Pit Chamber (2 x 2 x 2.5)	*1 unit*			

Note : a/ include fittings & other expenses such as taxes, clearance and handling up to the construction site.

Signature and Official Stamp of Bidder: _____ Date:_____

IC. INTERCONNECTIONS

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	BID ITEM TOTAL UNIT PRICE (5)
350mm SSP to 350mm SSP	*1*			
200mm uPVC to 350mm SSP	*1*			
200mm uPVC to 200mm uPVC	*1*			
350mm SSP to 150mm uPVC	*1*			
200mm uPVC to 350mm SSP	*1*			
300mm SSP to 150mm uPVC	*1*			
300mm SSP to 300mm SSP	*2*			
300mm SSP to 150mm uPVC	*1*			
300mm SSP to 100mm uPVC	*1*			
300mm SSP to 150mm uPVC	*1*			
300mm SSP to 150mm uPVC	*1*			
	12			

Note : a/ include fittings & other expenses such as taxes, clearance and handling up to the construction site.

Signature and Official Stamp of Bidder: _____ Date:_____

ID. PIPE CROSSING / SUPPORT

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
CANAL CROSSING 441 DIA. SSP (CROSSING SUMMER LIGHT)					
400mm x 9.5mmx 6m spiral steel pipe cc/cl	*4 lengths*				
welding rod 6011	*20 kgs*				
welding rod 6013	*30 kgs*				
oxy/acetylene	*4 sets*				
concrete	*6.03 cu.m.*				
Reinforcement	*603 Kgs*				
Painting Materials	*12 gal*				
Gravel	*12 cu.m.*				
Scaffolds/ supports	*18 Ln.m*				
Flange Plain end Adaptors	*2 Units*				
Sleeve Type Coupling (STC)400mm	*2 units*				
Tie wires	*5 kls.*				
CREEK CROSSING (POLOMOLOK SOUTH BRIDGE)					
400mm x 9.5mmx 6m spiral steel pipe cc/cl	*5 lengths*				
welding rod 6011	*60 kgs*				
welding rod 6013	*70 kgs*				

Signature and Official Stamp of Bidder: _____ Date:_____

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
oxy/acetylene	*10 sets*				
Portland cement (40kg)	*204 bags*				
Sand	*24 cu.m.*				
G.I. Tie Wire	*10 kg*				
Painting materials	*12 gals.*				
Gravel	*12 cu.m.*				
Scaffolds / Support	*18 ln.m*				
Flange Plain end Adaptors	*2 units*				
Sleeve Type Coupling (STC)-400mm	*2 units*				
RIVER CROSSING (MATIN-AO/ TATEH)	*54 ln.m.*				
400mm x 9.5mmx 6m spiral steel pipe cc/cl	*10 lengths*				
400mm Sleeve Type Coupling (STC)	*2 pcs*				
I- Beam (S 24x90)	*9 lengths*				
GI Pipe 2"ø Sched 40	*50 lengths*				
3"x 6mm thk Angle Bar	*30 lengths*				
welding rod 6011	*65 kgs*				
welding rod 6013	*80 kgs*				

Signature and Official Stamp of Bidder: _____ Date:_____

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
oxy/acetylene	*10 sets*				
Concrete	*10 cu.m.*				
Reinforcement	*603 kgs*				
Painting materials	*12 gals*				
Gravel	*12 cu.m.*				
GI Tie Wires	*6 kgs.*				
Scaffolds / Support	*48 ln.m*				
Flange Plain end Adaptors	*2 Units*				
Sleeve Type Coupling (STC)-400mm	*2 units*				
NATIONAL HIGHWAY CROSSING-ML INDUSTRIES					
200mmx 6mm x 6m SSP	*10 lenghts*				
welding rod 6011	*65 kgs*				
welding rod 6013	*80 kgs*				
Portland cement (40kg)	*4 bags*				
Sieve Sand	*0.35 cu.m.*				
ERODED PORTION – PIPE SUPPORT					

Signature and Official Stamp of Bidder: _____ Date:_____

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE SUPPLY a/ (3)	UNIT PRICE INSTALLATION (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
- Fronting ML & Beside Monterey (Every 12mtrs.)	*8 units*				
HIGHWAY CROSSING					
- Purok San Isidro (Installation of 1000mm RCCP)	24 ln.m.				
REINFORCED CONCRETE CULVERT PIPE (RCCP) Drainage Installation					
- Ps# 10 RCCP 300mm	40 ln.m.				
- Ps#11 RCCP 300mm	23 ln.m.				

Note : a/ include fittings ,Materials & other expenses such as taxes, clearance and handling up to the construction site.

IE. REMOVAL OF EXISTING CONCRETE PAVEMENT, STRUCTURE AND RESTORATION

IE.1 PAVEMENT DEMOLITION

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE LABOR (3)	UNIT PRICE EQUIPMENT (4)	BID ITEM TOTAL UNIT PRICE (5)
Concrete Breaking and Disposal	164 cu.m.			

Note : a/ includes and other expenses such as taxes and clearance

Signature and Official Stamp of Bidder: _____ Date:_____

IE.2 SURFACE RESTORATION

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE MATERIAL (3)	UNIT PRICE LABOR (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
Concrete Restoration	164 cu.m.				
Subgrade & Subgrade Preparation	270 cu.m.				
Reinforcement restoration	1,253 kgs				

Note: (3) includes and other expenses such as taxes and clearance

IF. POTHOLING AND EXCAVATION

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE LABOR (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
Potholing and excavation for interconnection	200 cum			

Signature and Official Stamp of Bidder: _____ Date:_____

IG. BEDDINGS

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE MATERIAL (3)	UNIT PRICE LABOR (4)	UNIT PRICE EQUIPMENT (5)	BID ITEM TOTAL UNIT PRICE (6)
Sand Bedding/ Backfill from Borrow Area	300 cum				

IH. ROCK/BOULDER/HARD LIMESTONE EXCAVATION

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE LABOR (3)	UNIT PRICE EQUIPMENT (4)	BID ITEM TOTAL UNIT PRICE (5)
Rock/Boulder/ Hard Limestone Excavation	305 cum			

23.0THRUST BLOCKS AND ANCHOR

BID ITEM (1)	QTY (Nos.) (2)	UNIT PRICE MATERIAL (3)	UNIT PRICE LABOR (4)	BID ITEM TOTAL UNIT PRICE (6)
Concrete thrust blocks	8 cum			

Signature and Official Stamp of Bidder: _____ Date:_____

II. STRUCTURES

IIA.1 MAGALONG PUMPING STATION – PS#10

A. Pump House

Description	Quantity	Unit Installed Cost	Total Amount
Area = 3.4m x 2.5m			
GENERAL REQUIREMENTS			
Temporary Site Facilities	*18 sq.m.*		
EARTHWORKS			
Excavation (ordinary & rock/limestone)	*10 cu.m.*		
Backfill,	*5 cu.m.*		
Gravel Bedding	*3 cu.m.*		
CONCRETE WORKS			
Concrete (columns, Beam & Flooring)	*5 cu.m.*		
Rebars	*378.6 kg.*		
Formworks	*10.9 sq.m.*		
MASONRY/PLASTERING WORKS			
Masonry, (4-inch thick CHB)	*60 sq.m.*		
METAL WORKS/ ROOFING/ CEILING/ROOF DRAIN / END WALL FLUSHING/ BENDED MATERIALS	*19.70 sq.m.*		
DOORS & WINDOWS	*24 ln.m*		
Doors	*3 units*		
Windows	*1 unit*		
ELECTRICAL SYSTEM	*8.5 sq.m.*		
Lighting, Outlets, Conduits, Wirings,, etc.			
PAINTING/COATING WORKS	*125 sq.m.*		
TOTAL COST OF PUMP HOUSE - PS#10 - MAGALONG			

Signature and Official Stamp of Bidder: _____ Date:_____

B. Generator set Shelter – MAGALONG

Description	Quantity	Unit Installed Cost	Total Amount
Area = 3.0m x 3.5m			
EARTHWORKS			
Excavation (ordinary & rock/limestone)	*8 cu.m.*		
Backfill,	*5 cu.m.*		
Gravel Bedding	*2 cu.m.*		
CONCRETE WORKS			
Concrete (Flooring 6"- See plan)	*3 cu.m.*		
Rebars (Anchor / Flooring)	*124.75 kg*		
MASONRY/PLASTERING WORKS	*8 sq.m.*		
Masonry, (4-inch thick CHB)	*26 sq.m.*		
METAL WORKS (Wire mesh)			
TRUSSES / ROOFING	*8.5 Ln. m.*		
BENDED MATERIALS	*12.9 ln. m*		
ELECTRICAL SYSTEM			
Lighting, Outlets, Conduits, Wirings, etc.	*10.5 Sq.m.*		
PAINTING	*12.25 sq.m.*		
TOTAL COST FOR GENSET SHELTER Ps # 10 - MAGALONG			

Signature and Official Stamp of Bidder:_____ Date:_____

C. Perimeter Fence – MAGALONG

Description	Quantity	Unit Installed Cost	Total Amount
EARTHWORKS			
Excavation (ordinary & rock/limestone)	*60 cu.m.*		
Gravel Bedding	*6 cu.m.*		
Cut & Fill Materials	*50Cu.m.*		
Imported Fill Materials	*310 cu.m.*		
CONCRETE WORKS			
Concrete	*29 cu.m.*		
Rebars	*2,110 kg.*		
Formworks	*480 sq.m.*		
MASONRY WORKS			
6" CHB	*96 sq.m.*		
4" CHB)	*192 sq.m.*		
PLASTERING	384 sq.m.		
METAL WORKS			
Swing-type Steel Gate (1 pair w/ Manhole) 2units- 3.0 m x 2.0m or 1 pair	*1 pair*		
TOTAL COST FOR PERIMETER FENCE PS # 10 – MAGALONG			

Signature and Official Stamp of Bidder:_____ Date:_____

IIA.2 MABAQUIAO PUMPING STATION – PS#11

A. Pump House

Description	Quantity	Unit Installed Cost	Total Amount
Area = 3.4m x 2.5m			
GENERAL REQUIREMENTS			
Temporary Site Facilities	*18 Sq.m.*		
EARTHWORKS			
Excavation (ordinary & rock/limestone)	*10 cu.m.*		
Backfill,	*5 cu.m.*		
Gravel Bedding	*3 cu.m.*		
CONCRETE WORKS			
Concrete (columns, Beam & Flooring)	*5 cu.m.*		
Rebars	*378.6 kg.*		
Formworks	*10.9 sq.m.*		
MASONRY/PLASTERING WORKS			
Masonry, (4-inch thick CHB)	*60 Sq.m.*		
METAL WORKS/ ROOFING/ CEILING/ROOF DRAIN / END WALL FLUSHING/ BENDED MATERIALS	*19.70 Sq.m.*		
DOORS & WINDOWS	*24 Ln.m*		
Doors	*3 units*		
Windows	*1 unit*		
ELECTRICAL SYSTEM			
Lighting, Outlets, Conduits, Wirings,, etc.	*8.5 sq.m.*		
PAINTING/COATING WORKS	*125 Sq.m.*		
TOTAL COST OF PUMP HOUSE - PS#11 MABAQUIAO			

Signature and Official Stamp of Bidder:_____ Date:_____

B. Generator Set Shelter – MABAQUIAO

Description	Quantity	Unit Installed Cost	Total Amount
Area = 3.0m x 3.5m			
EARTHWORKS			
Excavation (ordinary & rock/limestone)	*8 cu.m.*		
Backfill,	*5 cu.m.*		
Gravel Bedding	*2 cu.m.*		
CONCRETE WORKS			
Concrete (Flooring 6"- See plan)	*3 cu.m.*		
Rebars (Anchor / Flooring)	*124.75 kg.*		
MASONRY/PLASTERING WORKS			
Masonry, (4-inch thick CHB)	*8 sq.m.*		
METAL WORKS (Wire mesh)	*26 sq.m.*		
TRUSSES / ROOFING	*8.5 Ln. m.*		
BENDED MATERIALS	*12.9 ln. m*		
ELECTRICAL SYSTEM			
Lighting, Outlets, Conduits, Wirings, , etc.	*10.5 Sq.m.*		
PAINTING	*12.25 sq.m.*		
TOTAL COST FOR GENSET SHELTER PS # 11- MABAQUIAO			

Signature and Official Stamp of Bidder:_____ Date:_____

III. ELECTRO-MECHANICAL EQUIPMENT

For the Pumping Facilities, the bidder shall complete the following form by inserting the quantity and price amount (in figures) for each item, in the space provided. The amount shall represent the true breakdown of the bid price for lump sum shown under Part III of the bid form. Items not shown in the breakdown hereunder, but shown on the drawings shall be specified and added by the bidder, items not applicable shall be deleted.

IIIA PUMPING FACILITIES

IIIA.1 MAGALONG PUMPING STATION (PS#10)

Description	Quantity	Unit Installed Cost	Total Amount
45.0 LPS @ 130m TDH, stainless steel 316 pump coupled to 100Hp, 460 V, 3 Phase, 60 HZ, 8"Ø Franklin submersible motor	1 pc		
Submersible Cable, #50mm²/1/0 AWG, 3C	95 m		
Splicing Kit 3M 82 - 3A	2 pc		
150 Hp, 460V, 3 Phase, 60 Hz VFD with Standing type Enclosure customized for PolWD with line reactor, pressure transducer (see plan & drawing)	1 pc		
Isolation Breaker (150 Amp) Thermal Magnetic Circuit Breaker (bolt type terminals equipped with 6 pcs terminal eye (38x10))	1 pc		
Electrical Wires 50mm² THW (stranded)	115 m		
2 ½"Ø 2mts. Flexible Liquid Tight Conduit with 2 pcs Straight connectors and 1 pc 2"Ø RSC elbow, 3 meters RSC with coupling	1 lot		
6" Ø B.I. Column Pipe w/ FRANCE Coupling, sched 120 (6mm thick) @ 3 m/ Length	24 pcs		
6" Ø B.I. Column Pipe w/ FRANCE Coupling, (6mm thick) @ 1.5 m/ Length	2 pcs		
6" Ø B.I. Elbow (weld type)	2 sets		

Signature and Official Stamp of Bidder:_____ Date:_____

Description	Quantity	Unit Installed Cost	Total Amount
6" Ø Flange (8 holes with 16 pcs-3/4"Ø bolts, nuts 2x washers and rubber gasket)	4 pcs		
AUTOMATIC TRANSFER SWITCH 200 AMPS, 460V, 3 PHASE (motorized) with OMRON Power-OFF delay, Digital Voltage monitor and other needed control components, switched and displays (see plan & drawings)	1 pc		
Assorted Fittings, Bolts, Washers, & Nuts (5/8" dia. stainless), well electrodes and wirings, cable ties	1 lot		
Auxiliary Panel board (2x6) with breakers	1 lot		
1-200KVA POWER GENERATOR SET (SEE SPECIFICATIONS)	1 Set		
DISCHARGE LINE, VALVE FITTINGS, FLOW METER WITH CIVIL WORKS (PUMP FOUNDATION, PIPE SUPPORT, SPLASH BOX, ETC.)			
6" Ø B.I. TEE (Flange type 8 holes) with 3 pairing flanges, 16 pcs-3/4"Ø x 5" bolts, 8 pcs-3/4"Ø x 4" bolts, 24 pcs plain washers, rubber gaskets.	1 pc		
6" Ø Steel Pipe (6mm thick - 6 m length)	3 pcs		
6"Ø Butterfly Valve with fitting bolts, nuts & washers	2 pcs		
6" Ø Universal Sleeve Type Coupling w/ bolts, nuts & washers	2 pcs		
6" Ø Check Valve (swing type) with 2 pairing Flanges, 2 rubber gaskets, bolts, nuts & washers	1 pc		
6" Ø Electromagnetic Full-bore Flow meter with 2 pairing Flanges, 2 rubber gaskets, bolts, nuts & washers	1 pc		

Signature and Official Stamp of Bidder: _____ **Date** _____ ____

Description	Quantity	Unit Installed Cost	Total Amount
1"Ø Air Release Valve assembly	1 pc		
Discharge line accessories (3pcs-1/2"Ø coupling, 3pcs-1/2"Ø to 3/8"Ø reducer bushing, 1 pc-3/8"Ø Ball Valve,1 pcs 3/8"Ø Tee, 2 pcs 3/8"Øx 3" nipple, 2 pcs 3/8"Ø x 2" nipple, 1 pc-100 PSI pressure gauge, 1 pc 5/8 faucet) (SEE DETAILED PLAN)	1 Set		
Fire Extinguisher (Dry – type ABC & Gw 6.5 kgs	1 Set		
(PS#10) Delivery, installation, testing and commissioning	1 lot		
TOTAL COST FOR MAGALONG PUMPING STATION - PS#10			

IIIA.2 MABACQUIAO PUMPING STATION (PS#11)

Description	Quantity	Unit Installed Cost	Total Amount
1-50 HP SUBMERSIBLE PUMP AND MOTOR, ELECRICAL CONTROLS, CABLE AND COLUMN PIPE			
30.0 LPS @ 75m TDH, stainless steel **316** pump coupled to 5**0Hp, 460 V, 3** Phase, **60** HZ, 8"Ø Franklin submersible motor	1 pc		
Submersible Cable, #50mm² 3c/ # 2.0 AWG	85 m		
Splicing Kit **3M 82 - 3A**	2 pcs		
60 Hp**, 460**V**, 3** Phase**, 60** Hz VFD with Standing type Enclosure customized for PolWD with line reactor, pressure transducer (*see plan & drawing*)	1 pc		

Signature and Official Stamp of Bidder: _____ **Date:**_____

Description	Quantity	Unit Installed Cost	Total Amount
Isolation Breaker (150 Amp) Thermal Magnetic Circuit Breaker (bolt type terminals equipped with 6 pcs terminal eye (38x10))	1 pc		
Electrical Wires 3**0mm²** THW (stranded)	115 m		
2"Ø 2mts. Flexible Liquid Tight Conduit with 2 pcs Straight connectors and 1 pc 2"Ø RSC elbow, 3meters RSC with coupling	1 Set		
6" Ø B.I. Column Pipe w/ FRANCE Coupling, sched 120 (6mm thick) @ 3 m/ Length	26 Pcs		
6" Ø B.I. Column Pipe w/ FRANCE Coupling, (6mm thick) @ 1.5 m/ Length	2 Pcs		
6" Ø B.I. Elbow (weld type)	2 Sets		
6" Ø Flange (8 holes with 16 pcs-3/4"Ø bolts, nuts 2x washers and rubber gasket)	4 Pcs		
6" Ø Flange (8 holes with 16 pcs-3/4"Ø bolts, nuts 2x washers and rubber gasket)	4 Pcs		
Assorted Fittings, Bolts, Washers, & Nuts (5/8" dia. stainless), well electrodes and wirings, cable ties	1 Set		
AUTOMATIC TRANSFER SWITCH 150 AMPS, 460V, 3 PHASE (motorized) with OMRON Power-OFF delay, Digital Voltage monitor and other needed control components, switched and displays *(see plan & drawings)*	1 pc		
Auxiliary Panel board (2x6) with breakers	1 Set		
1-125 KVA power generator set (see specifications)	1 Set		
Discharge Line, Valve Fittings, Flow Meter with Civil Works (Pump Foundation, Pipe Support, Splash Box, Etc.)			

Signature and Official Stamp of Bidder: _____ **Date:**___ __ __ _____

Description	Quantity	Unit Installed Cost	Total Amount
6" Ø B.I. TEE (Flange type 8 holes) with 3 pairing flanges, 16 pcs-3/4"Ø x 5" bolts, 8 pcs-3/4"Ø x 4" bolts, 24 pcs plain washers, rubber gaskets.	2 pc		
6" dia Steel Pipe (6mm thick - 6 m length)	3 pcs		
6"Ø Butterfly Valve with fitting bolts, nuts & washers	2 pcs		
6" Ø Universal Sleeve Type Coupling w/ bolts, nuts & washers	2 pcs		
6" Ø Check Valve (swing type) with 2 pairing Flanges, 2 rubber gaskets, bolts, nuts & washers	1 pc		
6" Ø Electromagnetic Full-bore Flowmeter with 2 pairing Flanges, 2 rubber gaskets, bolts, nuts & washers	1 pc		
1"Ø Air Release Valve assembly	1 pc		
Discharge line accessories (3pcs-1/2"Ø coupling, 3pcs-1/2"Ø to 3/8"Ø reducer bushing, 1 pc-3/8"Ø Ball Valve,1 pc 3/8"Ø Tee, 2 pcs 3/8"Øx 3" nipple, 2 pcs 3/8"Ø x 2" nipple, 1 pc-100 PSI pressure gauge, 1 pc 5/8 faucet) (SEE PLAN DETAILS)	1 Set		
Fire Extinguisher (Dry – type ABC & Gw 6.5 kgs	1 Set		
(PS#11) Delivery, installation, testing and commissioning	1 lot		
TOTAL COST FOR MABACQUIAO PUMPING STATION - PS#11			

Signature and Official Stamp of Bidder:_____Date: _____

IV. SPECIAL ITEMS

IVA Contractor's Mobilization, Demobilization, Project Organization, Temporary Facilities, Permits, Fee, Guarantees, Bonds, etc.

No.	Description	Quantity/ Unit	Unit Cost	Total Amount
1.	Mobilization/Demobilization Movement	LS		
2.	Temporary Site Facilities, including bunk houses, storage, utilities and maintenance	18 mos		
3.	Project Organization	LS		
4.	Permits, Fees, Bonds, Guarantees, Warrantees and Insurances			
	a. Excavation Permit (Pipe Trenching)	1 unit		
	b. Demolition / restoration permits/Bonds (NHW)	2 Units		
	c. Building/Electrical/ Mechanical Permit fees (PS#10 & 11)	2 Units		
	d. Contractors All Risk Insurance (CARI)	1 unit		
	e. Occupational Safety and Health Program accreditation/ permit from LABOR	1 unit		
6.	Occupational Safety and Health Program (PPA's, Warning devices, and Safety Personnel / Practitioner)	1 unit		
IVA	**SUB-TOTAL IVA**			

IVB Provide and Maintain Project Engineer's Office

No.	Description	Quantity/ Unit	Unit Cost	Total Amount
1.	Provide and Maintain Project Engineer's Office. All monthly utility bills, cable, internet connection/wi-fi shall be included in this bid item.	18 mos		

Signature and Official Stamp of Bidder:_____ Date: _____

No.	Description	Quantity/ Unit	Unit Cost	Total Amount
2.	Provide furniture, computers, office equipment, supplies, printer ink, consumables, etc. for the duration of the contract. **See Appendix A** for specific requirements.	LS		
IVB	**SUB-TOTAL IVB**			

IVC Project Billboards: Provide, Install, and Maintain Project and COA Sign Boards

	Description	Quantity/ Unit	Unit Installed Cost	Total Amount
1.	Project Signs	5 sets		
2.	COA Sign Board	1 set		
IV.C	**SUB-TOTAL FOR IVC**			

Signature and Official Stamp of Bidder: _____ Date: _____

APPENDIX A

Supply the following office furniture, equipment, computers and office supplies.

Item	Description	Specification	Qty	Unit
1	Desktop computer set w/ computer table and chair	Latest Model, core i7/core i9 1 TB Hard Drive (min.), 4 GB RAM, 2GB Video OS – 64 bit Windows 10 w/ latest Microsoft Office Software, AutoCad, latest anti-virus and Wi-fi ready as approved and accepted by the Engineer	1	set
2	Printer	Three-in-one, minimum (printer, copier & scanner) latest model as approved/accepted by the PolWD Engineer.	1	unit
3	Uninterrupted Power Supply (UPS)	Latest model as approved by the Engineer	1	unit
4	Laptop	Latest Model, 1 TeraByte Hard Drive, 4 GB RAM, 2 GB Video Card, OS – 64 bit Windows 10 with latest Microsoft Office Software, AutoCad, latest anti-virus and Wi-fi ready as approved and accepted by the PolWD Engineer	1	unit
5	Flash Drive/USB	64 GB Capacity	2	pcs
6	Steel Filing Cabinet	Four (4) Drawers	1	pc
7	Office Table	Executive Table as approved by the Engineer	3	pcs
8	Office Chairs	Heavy duty as approved by the Engineer	3	pcs

Item	Description	Specification	Qty	Unit
9	Conference Table and Chairs	8-seater	1	set
10	Refrigerator	6 cu.ft. (min.)	1	unit
11	Aircon	1 Hp capacity (min)	2	units
12	Water Dispenser	Standard (hot and cold)	1	unit
13	Stand Fan	Heavy Duty (adjustable)	2	units
14	Gas Stove w/ Gas Tank	2 Burner	1	set
14	Beds with complete beddings, pillows and blankets	Semi double bed as approved by the Engineer	3	sets
13	Kitchen wares	Complete set as approved by the Engineer	1	lot

The Field Engineer's Office/ Contractors office shall be 60 sq.m. (Minimum) floor area with living room (will serve as office space), two (2) bedrooms, bathroom and kitchen. The Field office intended for PolWD Engineers & Contractor shall be located along the NHW (Project Site. All utilities, such as rental, water, power, and telephone and internet connection among others shall be borne by the Contractor and to be included in its Bid.

Office Consumables to be supplied by the Contractor for the duration of the Contract:

1. Bond Papers (A4, long and short sizes)
2. Calculators (2 pcs)
3. Ball Pens (black, blue and red)
4. Pencil
5. Folders and Brown Envelopes
6. Printer Ink (black and color)
7. Other Office Consumables, as required by the Engineer

Signature and Official Stamp of Bidder: _____ Date: _____

Section IX. Bidding Forms

TABLE OF CONTENTS

Bid Form

Date:_____

IFB[1] No: WDDSP-PolWS-OCB-02

To: POLOMOLOK WATER DISTRICT
Address: National Highway, Polomolok
South Cotabato

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract – Polomolok Water Supply System Improvement Project;

(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 one hundred twenty (120) calendar 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 Polomolok Water Supply System Improvement Project **of the Polomolok Water District.**

(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 onbehalf of: _____

Date: _____

Form of Contract Agreement

THIS AGREEMENT, made this *[insert date]* day of *[insert month]*, *[insert year]* between Polomolok Water District, National Highway, Polomolok, South Cotabato (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.

A F F I D A V I T

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 _____

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 unde

1. I/We unde ed by a Bid Security, w

2. I/We accep any contract with any p Blacklisting Order; and, e Guidelines on the Use pt of written demand by forcement of the bid sec t 69.1 (f), of the IRR of y undertake.

3. I/We under he following circumstan

   a. Upon uant to your reques

   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_.

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract
Location of the Contract

List of all Ongoing Government & Private Construction Contracts including contracts awarded but not yet started

Business Name :_____
Business Address :

Name of Contract/Location Project Cost	a. Owner Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Date Awarded b. Date Started c. Date of Completion	% of Accomplishment		Value of Outstanding Works
			Description	%		Planned	Actual	
Government								
Private								
						Total Cost		

Note: This statement shall be supported with:

1 Notice of Award and/or Contract
2 Notice to Proceed issued by the owner
3 Certificate of Accomplishments signed by the owner or Project Engineer

Submitted by : _____
(Printed Name & Signature)
Designation :_____
Date : _____

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

Statement of all Completed Government & Private Construction Contracts which are similar in nature

Business Name : _____
Business Address : _____

Name of Contract	a. Owner Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Amount at Award b. Amount at Completion c. Duration	a. Date Awarded b. Contract Effectivity c. Date Completed
			Description	%		
Government						
Private						

Note: This statement shall be supported with:

1 Contract
2 CPES rating sheets and/or Certificate of Completion
3 Certificate of Acceptance

Submitted by : _____
(Printed Name & Signature)
Designation : _____
Date : _____

LOCAL WATER UTILITES ADMINISTRATION

Name of the Contract:
Location of the Contract:

Statement of Availability of Key Personnel and Equipment

(Date of Issuance)

Name of the Head of the Procuring Entity
Position of the Head of the Procuring Entity
(Name of Procuring Entity)
(Address of Procuring Entity)

Attention : The Chairman
Bids and Awards Committee

Dear Sir / Madame:

In compliance with the requirements of the *(Name of the Procuring Entity)* BAC for the bidding of the *(Name of the Contract)*, we certify that *(Name of the Bidder)* has in its employ key personnel, such as project managers, project engineers, materials engineers and foremen, who may be engaged for the construction of the said contract.

Further, we likewise certify the availability of equipment that *(Name of the Bidder)* owns, has under lease, and/or has under purchase agreements, that may be used for the construction contracts.

Very truly yours,

(Name of Representative)
(Position)
(Name of Bidder)

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

CREDIT LINE CERTIFICATE

Date:_____

Name of the Head of the Procuring Entity
Name of the Procuring Entity
Address of the Procuring Entity

CONTRACT NAME : _____

COMPANY/FIRM :_____
ADDRESS :_____
_____

BANK/FINANCING INSTITUTION :_____
ADDRESS :_____
_____

AMOUNT :_____

This is to certify that the above Bank/Financing Institution with business address indicated above, commits to provide the Contractor, if awarded the above-mentioned Contract, a credit line in the amount specified above which shall be exclusively used to finance the performance of the above-mentioned Contract, subject to our terms, conditions and requirements.

The credit line shall be available within fifteen (15) calendar days after receipt by the Contractor of the Notice of Award and such line of credit shall be maintained until the project is completed by the Contractor.

This Certification is being issued in favor of said Contractor in connection with the bidding requirement of *(Name of the Procuring Entity)* for the above-mentioned Contract. We are aware that any false statements issued by us make us liable for perjury.

Name and Signature of Authorized
Financing Institution Officer :_____
Official Designation : _____

Concurred By:

Name & Signature of Contractor's

LOCAL WATER UTILITIES ADMINISTRAITON

Name of the Contract :
Location of the Contract ;

CONTRACTOR'S PROFILE

Date:
Name of Firm/Company:
Contractor ID: **Tax Account No.**
General Information **Foreign Contractor**

Address: **Nationality:**
Philippine Address:

Telephone Number: **Telephone Number:**
Fax Number: **Fax Number:**
E-mail Address: **E-mail Address:**
Cable Address: **Cable Address:**
Telex Number: **Telex Number:**
Percent of Filipino Ownership:

Legal Aspect

PCAB License Information **Person Managing Affairs of the Firm**

Type of Firm: **Name:**
Head Office Location: **Designation:**
Telephone Number:

License First Issue Date:
License Number: **Authorized Liaison Officer**
Validity Period: From To **Name:**
Principal Classification: **Designation:**
Category: **Telephone Number:**
Other Classifications:

Authorized Liaison Officer
Name:
Designation:
Telephone Number:

Registration Date:
Registration Number:
Validity Period: From To

Projects

Kinds of Projects	**Respective Size Ranges**
Building and Industrial Plant	
Dam, Reservoir and Tunneling	
Irrigation and Flood Control	
Park-Playground or Recreational Work	
Port, Harbor and Offshore Engineering	
Road, Highway Pavement Railways, Airport, Horizontal Structures, Bridges	
Sewerage and Sewage System	
Water Supply	
Water Treatment Plant and System	

Financial Aspect

Record Year	Total Assets	Current Assets	Total Liabilities	Current Liabilities	Total Present Net Worth	Current Net Worth

Completed Projects

Contract ID	Name of Contract	Owner	Participation Percentage	Contract Date Started	Contract Date Completed	Major Categories of Work	Dimension	Total As Built Cost Per Major Work Category

Ongoing Projects

Contract ID	Name of Contract	Owner	Participation Percentage	Contract Date Started	Contract Date Completed	% WA[2]	% TE[3]	Major Categories of Work	Dimension	Total As Built Cost Per Major Work Category

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

[2] *WA = Work Accomplished*

[3] *TE = Time Elapsed*

Construction Schedule and S-Curve

Item#	Description	Month 1				Month2				Month3				Month4				Month5				Month6				Month7				Month8				Month9				Month10				Month11				Month12			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

Submitted by:

Name of the Representative of the Bidder Date: _____
Position
Name of the Bidder

Construction schedule (bar chart for the construction activities) and S-curve (for financial requirements) are requirements in the Technical Envelope to be submitted by the bidder

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

MANPOWER UTILIZATION SCHEDULE

Category	Month											

Contractor's Name:	Name of the Procuring Entity:	Contract Name:

Submitted by:

Name of the Representative of the Bidder Date:
Position
Name of the Bidder

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

OUTLINE

NARRATIVE DESCRIPTION

OF

CONSTRUCTION METHODS

1.0 INTRODUCTION

Refer to Bidding, etc.

2.0 BRIEF DESCRIPTION OF CONTRACT WORKS

State general features of contract works. Use tables as necessary.

3.0 CONSTRUCTION METHODS AND PROCEDURES

3.1 Methodology or General Approach

State general approach in construction in terms of use of equipment-intensive or labor-based methods, any special techniques, methods or procedures to ensure completion on time and quality of construction financing the project, etc.

3.2 Program of Work

CPM, Progress Bar Schedule and Development Schedules submitted.

3.3 Financial Program

Cash flow schedules, provision for working capital, schedule of receipts, etc.

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

Contractor's Organizational Chart for the Contract

Submit Copy of the Organizational Chart that the Contractor intends to use to execute the Contract if awarded to him. Indicate in the chart the names of the Project Manager, Project Engineer, Bridge Engineer, Structural Engineer, Materials and Quality Control Engineer, Foreman and other Key Engineering Personnel.

Attach the required Proposed Organizational Chart for the Contract as stated above

LOCAL WATER UTILITIES ADMINISTRAITON

Name of the Contract :
Location of the Contract :

KEY PERSONNEL
(FORMAT OF BIO-DATA)

Give the detailed information of the following personnel who are scheduled to be assigned as full-time field staff for the project. Fill up a form for each person.

- Authorized Managing Officer / Representative
- Sustained Technical Employee

1. Name : _____
2. Date of Birth : _____
3. Nationality : _____
4. Education and Degrees : _____
5. Specialty : _____
6. Registration : _____
7. Length of Service with the Firm : _____ Year from _____(months)_____(year)
   To _____(months)_____(year)
8. Years of Experience : _____
9. If Item 7 is less than ten (10) years, give name and length of service with previous employers for a ten (10)-year period (attached additional sheet/s), if necessary:

Name and Address of Employer	Length of Service
_____	_____ year(s) from _____to _____
_____	_____ year(s) from _____to _____
_____	_____ year(s) from _____to _____

10. Experience:

    This should cover the past ten (10) years of experience. (Attached as many pages as necessary to show involvement of personnel in projects using the format below).

LOCAL WATER UTILITIES ADMNISTRATION

Name of the Contract
Location of the Contract

Qualification of Key Personnel Proposed to be Assigned to the Contract

Business Name :_____
Business Address : _____
_____

	Project Manager / Engineer	Materials Engineer	Foreman	Construction Safety and Health Personnel	Other positions deemed required by the Applicant for this project
1 Name					
2 Address					
3 Date of Birth					
4 Employed Since					
5 Experience					
6 Previous Employment					
7 Education					
8 PRC License					

Minimum Requirements : Project Manager / Engineer
: Materials Engineer
: Foreman
: Foreman

Note : Attached individual resume and PRC License of the (professional) personnel.

Submitted by :_____
(Printed Name & Signature)
Designation :_____
Date :_____

LOCAL WATER UTILITIES ADMINITRATION

Name of the Contract :
Location of the Contract :

List of Equipment, Owned or Leased and/or under Purchase Agreements, Pledged to the Proposed Contract

Business Name :_____
Business Address : _____
_____

Description	Model/Year	Capacity / Performance / Size	Plate No.	Motor No. / Body No.	Location	Condition	Proof of Ownership / Lessor or Vendor
A. Owned							
i.							
ii.							
iii.							
iv.							
v.							
B. Leased							
i.							
ii.							
iii.							
iv.							
v.							
C. Under Purchase Agreements							
i.							
ii.							
iii.							
iv.							
v.							

List of minimum equipment required for the project:

Submitted by : _____
(Printed Name & Signature)
Designation :_____
Date : _____

LOCAL WATER UTILITIES ADMINISTRATIONI

Name of the Contract :
Location of the Contract :

EQUIPMENT UTILIZATION SCHEDULE

Category / Equipment	Month											

Contractor's Name:	Name of the Procuring Entity:	Contract Name:

Submitted by:

Name of the Representative of the Bidder
Position
Name of the Bidder

Date: _______________________

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract
Location of the Contract

AFFIDAVIT OF SITE INSPECTION

I, *(Representative of the Bidder)*, of legal age, *(civil status)*, Filipino and residing at *(Address of the Representative)*, under oath, hereby depose and say:

1. That I am the *(Position in the Bidder)* of the *(Name of the Bidder)*, with office at *(Address of the Bidder)*;

2. That I have inspected the site for *(Name of the Contract)*, located at *(location of the Contract)*;

3. That I am making this statement as part of the requirement for the Technical Proposal of the *(Name of the Bidder)* for *(Name of the Contract)*.

IN FAITH WHEREOF, I hereby affix my signature this_____day of_____, 20____at _____, Philippines.

_____
AFFIANT

SUBSCRIBED AND SWORN TO before me this_____, day of_____2003, affiant exhibiting to me his/her Community Tax Certificate No._____issued on _____at_____, Philippines.

_____
(Notary Public)

Until _____
PTR No. _____
Date _____
Place _____
TIN _____

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

LOCAL WATER UTILITIES ADMINISTRATION

Name of the Contract :
Location of the Contract :

Contract Name :_____
Location : _____

CASH FLOW BY QUARTER AND PAYMENT SCHEDULE

PARTICULAR	% WT.	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
ACCOMPLISHMENT					
CASH FLOW					
CUMULATIVE ACCOMPLISHMENT					
CUMULATIVE CASH FLOW					

Submitted by:

Name of the Representative of the Bidder Date: _____
Position
Name of the Bidder

AFTER SALES SERVICES

The bidder shall add additional numbered pages if necessary for listing additional ítems.

The bidder shall indicate the facilities he can offer after sales services (after the end of the guarantee period) for the supply of replacement components and skilled maintenance services for the following equipment:

Pipes, valves, fittings and appurtenances:

Gate/Butterfly Valves

Flowmeter:

Pumps:

Motors

Diesel Generator Set and Accessories :

Others :

Signature and Official Stamp of Bidder: _____

_____

Date : _____ _____

MATERIALS ANDEQUIPMENT DETAILS

The Contractor shall provide the following information to be submitted together with the bid. If not included in the contract, disregard the item.

1. Pipelines and Appurtenances

ITEM	MATERIALS TYPE	SUPPLIER/ MANUFACTURER
PIPES		
150 mm dia, joints, fittings	_____	_____
200 mm dia., joints, fittings	_____	_____
Metal Pipes		
300 mm dia, joints, fittings	_____	
350 mm dia., joints, fittings	_____	_____
	_____	
Valves & Assemblies		_____
		_____
100 mm	_____	_____
150 mm	_____	_____
200 mm	_____	_____
250 mm	_____	_____
300 mm	_____	_____
Butterfly Valves	_____	_____
350 mm		
300 mm		
Pressure Regulating Valve		
150 mm		
Pressure Reducing Valve		
100 mm		
150 mm		
200 mm		

2. Electro-Mechanical Equipment

The information required under this Schedule must be complete. If identical items of

equipment are proposed at more than one location, then these locations should be clearly stated at the head of the equipment description. The information required in respect to each item of equipment are as follows:

PART I – MECHANICAL EQUIPMENT **SUPPLIER/ MANUFACTURER**

M.1 Pumps

a. Model
b. Type
c. Q, Rated discharge capacity
d. TDH, rated total dynamic head
e. NPSHR, net positive suction head required at rated condition
f. Efficiency, at rated conditions
g. Shut off Head & RPM, rotative speed
h. Test Certificates (Hydraulic Institute of Standards)

CERTIFIED TEST CURVES

i. Material of Construction
Pump Bowl
Impeller
Diffuser Valves
Shaft
Seals
Bearings

j. Driver, close coupled or belt/chain drive
Electric Motor
Voltage
Phase No.
Frequency
Insulation
Enclosure
Speed, RPM
Rated Hp
Engine Drive, close coupled or belt/chain drive
No. of Cylinders
Gas or diesel
Speed RPM at rated condition
Kind of starter
Rated Hp

Note: Drive Hp shall be non-overloading anywhere on the certified hydraulic curve.

k. Quality Assurance – ISO-9001 Certification, assurance written under quality assurance program.

M.2 Diesel Generator Set

a. Manufacturer or Make

b. Engine/Alternator Type and Model
c. Number of Cylinder
d. Engine Speed (RPM)
e. Type of Aspiration
f. Type of Cooling system
g. Fuel Consumption at Full Load. Standby Power and Rated Speed (Liters/Hr)
h. Rated Standby Capacity
i. Type of Governor
j. Type of Excitation
k. Frequency Regulation
l. Voltage Regulation
m. Voltage Output (Volts)
n. Frequency (Hertz)
o. Type of Switchboard (engine, wall or free standing)
p. Generator main Breaker Rating and KAIC (Amp)
q. Insulation Class

M.3 Flowmeter

a. No. of Units Required
b. Manufacturer
c. Type
d. Material of Construction
e. Units of Totalizer
f. Type of Connection
g. Working Pressure (kPa)
h. Nominal Diameter
i. Capacity

Signature and Official Stamp of Bidder: _____

_____

Date : _____ _____ ___

Annexes

Table of Contents

ANNEX 1

Environmental Assessment and Review Framework

Environmental Assessment and Review Framework

March 2014

Philippines: Water District Development Sector Project

Prepared by Local Water Utilities Administration for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of as of 19 March 2014)

Currency unit	–	peso (Php)
Php1.00	=	$0.0224074572
$1.00	=	Php 44.63

ABBREVIATIONS

ADB	–	Asian Development Bank
CEMP	–	Contractor's Environmental Management Plan
CIA	–	cumulative impact assessment
CKWD	–	City of Koronadal Water District
CNC	–	Certificate of Non-Coverage
DAO	–	Department Administrative Order
DENR	–	Department of Environment and Natural Resources
ECC	–	Environmental Compliance Certificate
EIA	–	environmental impact assessment
EIS	–	Environmental Impact Statement
EMB	–	Environmental Management Bureau
EMP	–	Environmental Management Plan
GHG	–	greenhouse gas
GRM	–	Grievance Redress Mechanism
IEE	–	initial environmental examination
LGU	–	local government unit
LWUA	–	Local Water Utilities Administration
MC	–	Memorandum Circular
NGO	–	non-government organization
NIA	–	National Irrigation Administration
NWRB	–	National Water Resources Board
PD	–	Presidential Decree
PEISS	–	Philippine Environmental Impact Statement System
PIU	–	project implementation unit
PMU	–	project management unit
PNSDW	–	Philippine National Standards for Drinking Water
RA	–	Republic Act
REA	–	Rapid Environmental Assessment
RO	–	Regional Office
SpTF	–	Septage Treatment Facility
SPS	–	ADB's Safeguard Policy Statement (2009)
WD	–	water district
WDDSP	–	Water District Development Sector Project
WDGRC	–	Water District Grievance Redress Committee
WHO	–	World Health Organization

WEIGHTS AND MEASURES

ha	–	hectare
HP	–	horsepower
km	–	kilometer
KVA	–	Kilo volt ampere
lps	–	liters per second
m	–	meter
m^2	–	square meter
m^3	–	cubic meter
mg/L	–	milligrams per liter
mm	–	millimeter
MPN	–	most probable number
PCU	–	platinum cobalt unit

NOTE

In this report, "$" refers to US dollars.

ENVIRONMENTAL ASSESSMENT AND REVIEW FRAMEWORK

I. INTRODUCTION

A. OVERVIEW

1. Rapid urbanization in the Philippines has stretched the capacity of urban infrastructure services and facilities to the limit, and increased water resources pollution and levels of service deprivation. Piped water service coverage outside the National Capital Region (NCR) is assumed to be less than 50% on average and to vary significantly across the country.

2. The Asian Development Bank (ADB) loan proceeds are expected to be on-lent to participating water districts (WDs) through the Local Water Utilities Administration (LWUA), a government-owned specialized lender to WDs with associated roles as tariff regulator and institutional development advisor. WDs play a vital role in achieving the Government's Millennium Development Goal (MDG) targets for safe water and improved sanitation by 2015 because they service more than half of the urban-dwelling Filipinos outside the NCR.[1]

3. The impact of the project is improved public health and the outcome is increased access to improved water supply and sanitation services in the communities served by participating WDs including the two pilots: Metro San Fernando Water District (MSFWD), and City of Koronadal Water District (CKWD). Over 200,000 persons will benefit from access to safe water and over 400,000 from improved sanitation. The expected outputs are: (i) at least 20 water supply subprojects and at least four pilot sanitation subprojects; and (ii) capacity and institutional development for participating WDs and LWUA. The investment cost of the project is estimated to be $76 million, including taxes and duties. The project is to be implemented from 2014 to 2020.

4. LWUA will be the executing agency (EA), and each WD will be the implementing agency (IA) of its subproject(s).

B. PURPOSE OF THE ENVIRONMENTAL ASSESSMENT REVIEW FRAMEWORK

5. The purpose of this Environmental Assessment Review Framework (EARF)[2] is to: (i) describe the proposed subprojects to be financed under the sector loan; (ii) explain the general anticipated environmental impacts of these subprojects; (iii) specify the requirements that will be followed in relation to the environmental screening, assessment, and categorization of all subprojects, and planning, including arrangement for meaningful consultation with affected people (APs) and other stakeholders and information disclosure requirements and, where applicable, safeguard criteria that are to be used in selecting subprojects; (iv) assess the adequacy of the clients' capacity to implement national laws and ADB's requirements and identify needs for capacity building; (v) specify implementation procedures, including the budget, institutional arrangements, and capacity development requirements; (vi) specify monitoring and reporting requirements; and (vii) describe the responsibilities of the EA and IAs and of ADB in relation to the preparation, implementation, and progress review of safeguard

[1] According to LWUA, as of end-2012, there were 511 operational WDs.

[2] The preparation of safeguard frameworks aims to clarify safeguard principles and requirements governing screening and categorization, environmental assessment, and preparation and implementation of environmental plans of subprojects to be prepared after loan approval.

documents of subprojects. The selection of additional subprojects to be funded under the sector loan will be in accordance with the environmental subproject selection criteria as outlined in this EARF.

6. The EARF shall serve as guide to ensure compliance with the environmental assessment requirements under ADB's Safeguards Policy Statement, 2009 (SPS) and the Philippine Environmental Impact Statement System (PEISS) as promulgated in Presidential Decree No. 1586 and its implementing rules and regulations, with the Department of Environment and Natural Resources (DENR) as the implementing agency. During the PPTA, Initial Environmental Examinations (IEEs) were prepared for CKWD's water supply and SpTF subprojects.

7. The EARF ensures that all subprojects funded under the sector loan, in the entirety of their project cycle, will not deteriorate or interfere with the environmental sensitivity of the subproject area, but rather improve environmental quality.

II. ASSESSMENT OF LEGAL FRAMEWORK AND INSTITUTIONAL CAPACITY

A. ENVIRONMENTAL LEGISLATION

8. The PEISS was established under Presidential Decree 1586 and is currently being implemented through its implementing rules and regulations contained in DENR Administrative Order No. 30, series of 2003 (DAO 03-30), which established the Revised Procedural Manual, together with Memorandum Circulars No. 2011-005, and 2010-14. The system categorizes environmentally critical projects (ECPs) as projects with significant potential to cause negative environmental impacts which have been declared as ECPs through Proclamation Nos. 2146 and 803. ECPs are grouped into four main categories, namely: (i) heavy industries, (ii) resource extractive industries, (iii) infrastructure projects, and (iv) golf courses. **Appendix 2** presents the list of ECP types and Environmentally Critical Area (ECA) categories.

9. **Environmentally Critical Areas.** An area is considered an environmentally critical area (ECA) if it exhibits any of the following characteristics:

(i) areas declared by law as national parks, watershed reserves, wildlife preserves, and sanctuaries;

(ii) areas set aside as aesthetic, potential tourist spots;

(iii) areas which constitute the habitat for any endangered or threatened species of indigenous Philippine wildlife;

(iv) areas of unique historic, archeological, geological, or scientific interests;

(v) areas which are traditionally occupied by cultural communities or tribes;

(vi) areas frequently visited and or hard-hit by natural calamities (geologic hazards, floods, typhoons, volcanic activity, etc.);

(vii) areas with critical slopes;

(viii) areas classified as prime agricultural lands;

(ix) recharged areas of aquifers;

(x) water bodies;

(xi) mangrove areas; and

(xii) coral reefs.

2.1 Grouping of Subprojects

10. An ECP located in a ECA or a non-ECA is classified as Group I, and required to secure an Environmental Compliance Certificate (ECC) by submitting an Environmental Impact Statement (EIS) to the Central Office of the Environmental Management Bureau (EMB) of DENR.

11. A non-ECP located in an ECA is categorized as Group II and required to secure an ECC by submitting an IEE or an IEE Checklist to the Regional Office of the EMB where the subproject will be located.

12. A non-ECP located in a non-ECA is categorized as Group III. This includes subprojects intended to directly enhance environmental quality or address existing environmental problems. Group III subprojects are unlikely to cause adverse environmental impacts and are not covered by the PEISS. Group III subprojects are issued a Certificate of Non-coverage (CNC) upon submission of an application online to the EMB.[3]

13. Group IV subprojects are co-located (a mix of subprojects in a contiguous area optionally applied as one subproject) and require programmatic EIS regardless of capacity, area, and number of locators/components.

14. Group V covers unclassified subprojects that are required to submit a Project Description Report as an interim documentary requirement. Unclassified subprojects may be covered or not covered by the PEISS subject to EMB review of the subproject description.

2.2 Environmental Impact Assessment Reports

15. EIA-covered subprojects in Groups I, II and IV require either an (i) EIS, (ii) PEIS, (iii) IEER, or (iv) IEEC, depending on subproject type, location, magnitude of potential impacts and project threshold. For non-covered subprojects in Groups II and III, a (v) Project Description Report (PDR) is the appropriate document to secure a decision from DENR-EMB. The PDR is a "must" requirement for environmental enhancement and mitigation projects in both ECAs (Group II) and non-ECAs (Group III) to allow the EMB to confirm the benign nature of proposed operations for eventual issuance of a Certificate of Non-Coverage (CNC). All other Group III (non-covered) subprojects do not need to submit PDRs – application is at the option of the proponent should it need a CNC for its own purposes, e.g. financing prerequisite. For Group V projects, a PDR is required to ensure new processes/technologies or any new unlisted subproject does not pose harm to the environment. The Group V PDR is a basis for either issuance of a CNC or classification of the subproject into its proper group.

16. **Environmental Impact Statement.** The EIS is a comprehensive study of the significant impacts of a subproject on the environment. It includes an EMP/Program that the proponent will fund and implement to protect the environment. The EIS is a document, prepared and submitted by the subproject proponent and/or EIA consultant that serves as an

[3] Based on DENR Memorandum Circular No. 2010-14.

application for an ECC.

17. **Initial Environmental Examination Report.** IEER is a document similar to an EIS, but with reduced details and depth of assessment and discussion.

18. **Initial Environmental Examination Checklist Report.** An IEEC Report is a simplified checklist version of the IEER, prescribed by the DENR to be filled up by the proponent to identify and assess a subproject's environmental impacts and the mitigation/enhancement measures to address such impacts.

19. The IEEC Report forms have been designed to simplify and standardize EIA reports so that minimal technical expertise is required to fill up of the form, which shall serve as the EIS submission for ECC applications. The checklist contains a series of questions that deals with issues and concerns about the proposed subproject and its environment. The checklist also provides information on the proposed subproject's environmental impact, both positive and negative. The information contained in the checklist will serve as a basis for the review and assessment of EMB's Regional Office for the issuance or denial of an ECC application.

20. The IEEC Report is applicable for the following types of subprojects that are covered under the provisions of existing guidelines on the PEISS:

(i) Batching and Crushing Plants
(ii) Fisheries/aquaculture Projects
(iii) Food & Food By-product and Beverages Manufacturing Plants
(iv) Non-Food Manufacturing (textile, rubber, chemical) Plants
(v) Subdivisions/Housing Projects
(vi) Building Projects (commercial, institutional, land transportation terminal, motels, hotels, condominiums/apartelles and storage facilities)
(vii) Cemetery and other Funeral Facility Projects
(viii) Livestock /Poultry Projects
(ix) Resorts and other Tourism/Leisure Projects
(x) Roads and Bridges
(xi) Water Supply Projects
(xii) Irrigation & Flood Control Projects
(xiii) Waste Management Projects

2.3 The Environmental Compliance Documents

21. **Environmental Compliance Certificate**. The Environmental Compliance Certificate (ECC) is a document issued by the EMB certifying that the proponent has complied with all the requirements of the PEISS and has committed to implement its approved EMP. The ECC also provides guidance to other agencies and to LGUs on EIA findings and recommendations, which need to be considered in their respective decision-making process.

22. **Certificate of Non-Coverage.** The Certificate of Non-Coverage (CNC) is a document issued by the EMB certifying that a project or undertaking is not covered by the PEISS and is not required to secure an ECC. A PDR may be submitted at the option of the proponent should the proponent need a CNC for its own purposes.[4]

[4] Under DENR Memorandum Circular No. 2010-14 issued on June 29, 2010, projects below the threshold of coverage based on the existing procedural manual for DAO 2003-30, CNC applications shall no longer require submission of Project Description Reports (PDR). The prescribed 1-page Application Form to be processed in the Automated Processing System is sufficient.

B. Applicable Government Environmental Requirements

23. **Environmental Permitting.** A summary of government environmental compliance requirements applicable to the subprojects is presented in **Table 2.1**.

Table 2.1: Applicable Environmental Permitting Requirements

Subproject	Stage of Development	Regulatory Permit	Issuing Agency	Applicable Legislation
Water supply	Pre-construction	ECC	EMB Regional Office	PD 1586 and its implementing rules and regulations
		Water Permit	NWRB	PD 1067 and its amended implementing rules and regulations
	Construction	Permit to Cut Trees	DENR Regional Office	PD 705
		Clearing/Fencing/ Excavation Permit	LGU	LGU Ordinance
	Operation	Permit to Operate Emission Source Installation	EMB Regional Office	RA 8749 and its implementing rules and regulations
		Compliance with Phil. National Standards for Drinking Water 2007	DOH	DOH AO 2007-0012
Septage Treatment Facility	Pre-construction	ECC	EMB Regional Office	PD 1586 and its implementing rules and regulations
	Construction	Permit to Cut Trees	DENR Regional Office	PD 705
		Clearing/Fencing/ Excavation Permit	LGU	LGU Ordinance
	Operation	Discharge Permit	EMB Regional Office	RA 9275 and its implementing rules and regulations
		Permit to Operate Emission Source Installation	EMB Regional Office	RA 8749 and its implementing rules and regulations

Note: ECC=Environmental Compliance Certificate, PD=Presidential Decree, NWRB=National Water Resources Board, DENR=Department of Environment and Natural Resources, LGU=Local Government Unit, EMB=Environmental Management Bureau, RA=Republic Act, DOH=Department of Health, AO=Administrative Order.

Source: PPTA Consultant.

24. Each water supply and SpTF subproject is required to submit an IEEC under the specified threshold as presented in **Table 2.2** in order to secure an ECC. **Appendix 3** contains the prescribed IEEC for water supply project and **Appendix 4** contains the IEEC for the septage management project.

Table 2.2: Project Grouping Matrix for Determination of EIA Report Type

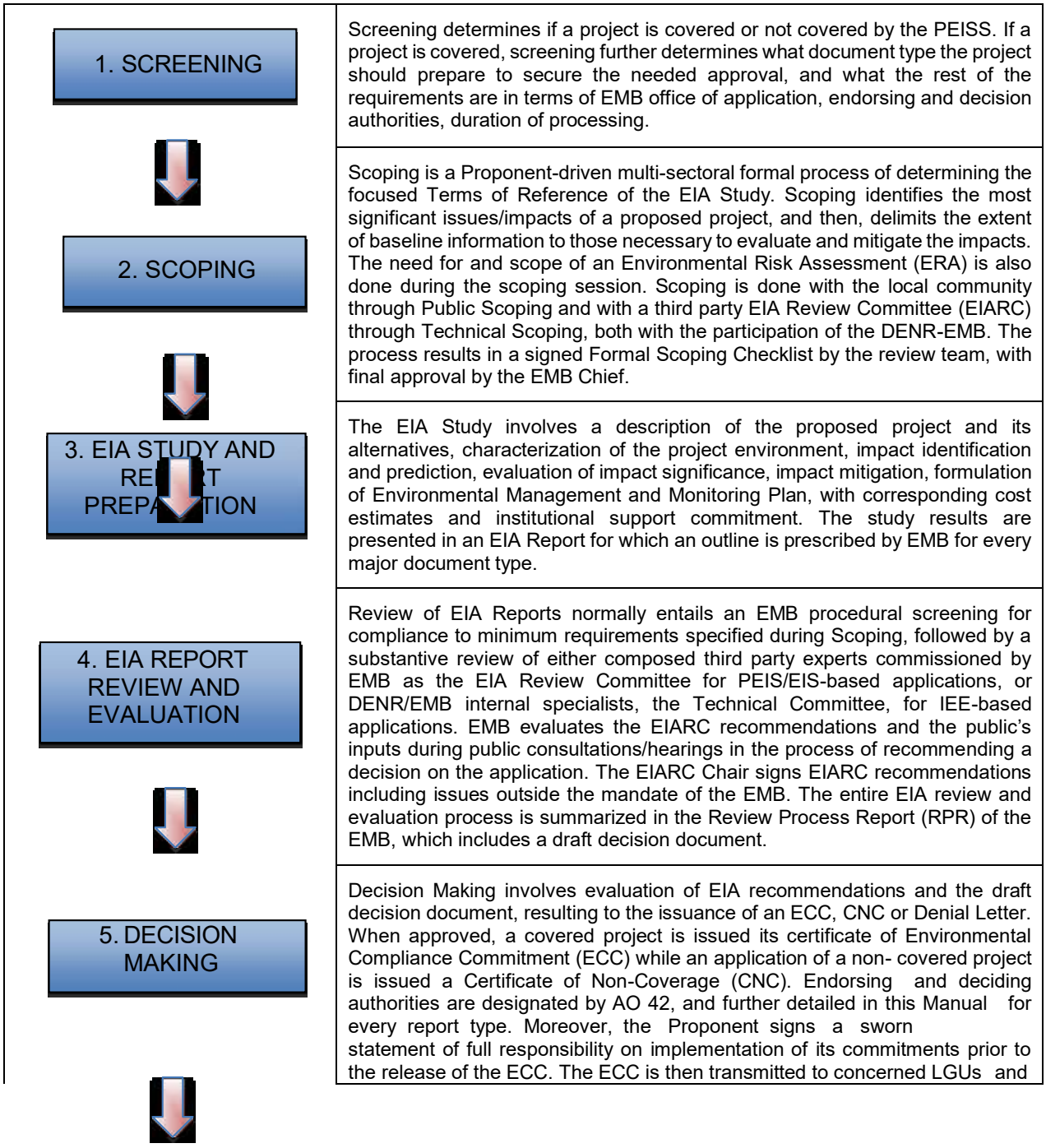
Type of Project	Project/Industry	Criteria/Limit (Threshold)
Water Supply Projects	Water supply systems (complete system)	Not more than 6 wells and other systems (infiltration gallery, etc.)

	Water supply system (distribution only)	Level III- with household connection and water treatment
Waste Management Projects	Domestic wastewater treatment facility	Less than 5,000 m^3 (quantity of waste to be treated annually

Source: DENR. 2011. DENR Memorandum Circular No. 2011-005: *Incorporating Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) concerns in the Philippine EIS System.* Manila. November 11, 2011.

25. **Figure 2.3** summarizes the Philippine EIA process.

Figure 2.3: Overview of the Philippine EIA Process



	other GAs for integration into their decision-making process. The regulated part of EIA Review is limited to the processes within EMB control. The timelines for the issuance of decision documents provided for in AO 42 and DAO 2003-30 are applicable only from the time the EIA Report is accepted for substantive review to the time a decision is issued on the application
6. MONITORING, VALIDATION, and EVALUATION/AUDIT	Monitoring, Validation and Evaluation/Audit stage assesses performance of the Proponent against the ECC and its commitments in the Environmental Management and Monitoring Plans to ensure actual impacts of the project are adequately prevented or mitigated.

Note: PEISS=Philippine Environmental Impact Statement System, EIA=Environmental Impact Assessment, EMB=Environmental Management Bureau, DENR=Department of Environment and Natural Resources, IEE=Initial Environmental Examination.
Source: Department of Environment and Natural Resources (DENR). 2008. Revised Procedural Manual for DENR Administrative Order No 30, series of 2003.

26. **Water Code of the Philippines.** The Water Code of the Philippines (Presidential Decree 1067) regulates the use of ground and surface waters in the Philippines. The Amended Implementing Rules and Regulations of the Water Code requires all users of ground and surface water to secure Water Permit from the NWRB.

27. The Water Code requires spacing for wells based on the rate of withdrawal as presented in **Table 2.4.**

Table 2.4: Spacing Requirements for Wells

Rate of Withdrawal (liters per second)	**Minimum Distance Between Wells** (meters)
2-10	200
More than 10-20	400
More than 20-40	600
More than 40	1,000

Note: NWRB may increase of decrease the above spacing requirements under any of the following circumstances:

a) For low-income housing development projects where home lot size will limit available spacing between homeowners' wells;
b) Where the geologic formation may warrant closer or farther spacing between wells; and
c) Where assessment of pumping test records on yields, drawdown, circle of influence, seasonal fluctuations in water table and other technical data on groundwater wells, drilling and operation indicate possible closer or farther spacing between wells.

Source: National Water Resources Board (NWRB). 2005. Water Code of the Philippines and the Amended Implementing Rules and Regulations.

E. INSTITUTIONAL CAPACITY

28. LWUA is the EA, while the WDs are the IAs. LWUA has overall responsibility for project coordination, implementation, and liaison with ADB and other government offices. LWUA will establish a Project Management Unit (PMU) to coordinate implementation at the national level, including procurement of goods, works, and services. A PMU staff shall be designated as the Social Development and Safeguards Officer (Safeguards Officer) for the project. The Safeguards Officer shall ensure that all subprojects will comply with the relevant safeguards

requirements. In addition, the Safeguards Officer shall provide technical assistance to the individual IAs/WDs in preparing and complying with safeguards requirements. Finally, the Safeguards Officer shall be responsible for the monitoring of safeguards compliance during the entire project life.

29. At the subproject level, each WD will be responsible during construction and operation phase of the subproject. During the construction phase, each WD shall establish a Project Implementation Unit (PIU) to work closely with LWUA's PMU. A team of consultants will assist LWUA's PMU and each WD's PIU during pre-construction and construction phases. The role of the WDGRC during the construction phase is highlighted since it is an important aspect of the grievance redress mechanism in promptly addressing the public's complaints about environmental performance of the subproject during execution of the construction activities.

30. Each WD is responsible for the preparation of environmental assessment report and monitoring of safeguards issues for its water supply and sanitation subprojects. WDs have long been developing and managing water supply systems and have the capability to operate and maintain the system. However, the WDs need to develop their capabilities in septage management. It is recommended that prior to implementing the septage management program, the WDs should develop their institutional capability to manage the operation and maintenance of the SpTF and the collection, transport and treatment of septage. It is further recommended that a unit in the WDs be created that would handle septage management.

31. The EA and IAs require capacity building measures for (i) a better understanding of the program-related environmental issues; and (ii) strengthen their role in implementation of mitigation measures and subsequent monitoring. Trainings and awareness workshops are included in the capacity development technical assistance. The primary focus of the trainings and workshops are to enable staff to conduct impact assessments and carry out environmental monitoring and implement the EMPs. After participating in such activities, the participants will be able to make environmental assessments for subsequent projects, conduct monitoring of environmental plans, understand government and ADB requirements for environmental assessment, management, and monitoring (short and long term), and incorporate environmental features into future project designs, specifications, and tender/contract documents and carry out necessary checks and balances during project implementation.

III. ANTICIPATED ENVIRONMENTAL IMPACTS

32. The pilot WDs' water and sanitation subprojects have been identified and their respective components that require civil works and infrastructure are listed in **Appendix 1** and environmental impacts during design, pre-construction, construction, and operation will be reviewed and assessed for each subproject. During project construction and implementation, impacts on the physical environment such as water, air, soil, noise; and on the biological environment, like flora and fauna and socio-economic environment will be carefully assessed by the project environmental specialists.

33. The pilot WDs' water supply subprojects and additional subprojects will be of small-scale and often involve construction of wells and support facilities consisting of pump stations (electro-mechanical parts), water tanks and reservoirs, transmission and distribution lines. It is anticipated that impacts will be temporary and of short duration. In such cases, mitigation measures, i.e. control of air, dust pollution, checking of water and noise pollution, protection of biological environment can address adverse impacts. Other measures such as preparation and implementation of traffic management plans during pipe-laying will also be done in coordination with the consultant teams, local police, contractors, and the public. Safety

measures, both occupational and other health and hygienic condition, including careful handling of public utilities along with social aspects will be considered and impacts and mitigation measures will be elaborated in the EMPs. As presented in **Figure 2.3,** the required document for securing ECC may be either an EIS or an IEEC depending on the number of wells to be constructed. The PPTA prepared the IEE for CKWD's water supply subproject.

34. In relation to CKWD's proposed SpTF and additional sanitation subprojects, an IEE will be prepared aimed at integrating the environmental impacts that may be attributed from the proposed subprojects from the design to the operation and maintenance stages of the subprojects. Mitigating measures will be drawn to address the negative impacts of the subprojects. The PPTA prepared the IEE for CKWD's SpTF.

35. Anticipated environmental impacts for the assessed subprojects are provided in the IEERs. For subsequent subprojects, anticipated impacts during design, construction and operation are identified in **Table 3.1**.

Table 3.1: Anticipated Environmental Impacts Due to Project Implementation

Impact Field	Anticipated Impact on the Environment
A. Water Supply	
Design Phase	
Environmental clearances	Environmental permits are required (**Table 2.2**) in order to implement the project. If not pursued on timely basis, this can delay the project. Necessary environmental clearances and permits have to be obtained following the guidelines issued by the authorities.
Utilities	Telephone lines, electric poles and wires, water pipe (old) existing within right-of-way (ROW) require shifting without disruption to services.
Water supply	Health risk due to closure of existing water supply such as community tanks, water stations, and privately-owned small water pipes.
Social and cultural resources	Ground disturbance can uncover and damage archaeological and historical remains. Impact on sites of cultural/religious importance during pipe-laying.
Temporary construction work camps, stockpile areas, storage areas, and disposal areas	Locations may cause encroachment/impact either directly or indirectly on adjacent environments. It may also include the impacts on the people who might lose their homes or livelihoods due to the project activities.
Traffic	Traffic flow will be disrupted if routes for delivery of construction materials and temporary blockages during construction activities are not planned and coordinated.
Construction Phase	
Sources of materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.
Air quality	Emissions from construction vehicles, equipment, and machinery used for excavation and construction resulting to dust and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.
Surface water quality	Mobilization of settled silt materials, run-off from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate downstream surface water quality.
Noise levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people. Operation of heavy equipment and machines in the night time can cause nuisance to the surrounding environment/ people
Ecological resources	Cutting of trees would affect terrestrial ecological balance and affect terrestrial and aquatic fauna/wildlife.
Existing infrastructure and facilities	Disruption of service and damage to existing infrastructure located alongside roads, in particular electric poles and community-scheme water supply pipes.

Impact Field	Anticipated Impact on the Environment
Landscape and aesthetics	Solid wastes as well as excess construction materials may create unacceptable aesthetic condition.
Accessibility	Traffic problems and conflicts in ROW. Roads/people/businesses may be disturbed by repeated trenching.
Socioeconomic– Income	Impede the access of residents and customers to nearby shops. Shops may lose business temporarily.
Occupational health and safety	Occupational hazards which can arise during construction (e.g., trenching, falling objects, etc.).
Community health and safety	Community hazards which can arise during construction (e.g., open trenches, air quality, noise, falling objects, etc.). Trenching on concrete roads using pneumatic drills will cause noise and air pollution. Traffic accidents and vehicle collision with pedestrians during material and waste transportation.
Construction waste	Trenching will produce additional amounts of waste soil. And also accumulation of debris waste materials and stockpiling can cause environmental visual pollution.
Temporary work camps	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants. This may cause conflict with residents and problem of waste disposal and disruptions to residents.
Social and cultural resources	Risk of archaeological chance finds. Sites of social/cultural importance (schools, hospitals, religious place, tourism sites) may be disturbed by noise, dust, vibration, and impeded access.
Clean-up operations, restoration and rehabilitation	Impacts on social or sensitive receptors when post construction requirements are not undertaken, e.g. proper closure of camp, disposal of solid waste, and restoration of land after project construction.
Operation and Maintenance Phase	
General maintenance	Maintenance activities may cause disturbance to sensitive receptors, dusts, and increase in noise level.
Health of the served population	Public health is expected to improve with the available source of potable water.
Competition with other wells	Nearby wells may be adversely affected by the additional water abstraction.
Economic development	Impediments to residents and businesses during routine maintenance.
B. Septage Treatment Facilities	
Design Phase	
Effluent standards Environmental clearances	The SpTF must be designed to meet the prescribed effluent e standards specified in DENR DAO 35, series of 1992 (**Appendix 5).** Environmental permits should be complied with (**Table 2.2**) in the implementation of the project. If not pursued on timely basis, this can delay the project. Necessary environmental clearances and permits have to be secured following the guidelines issued by the authorities.
Construction work camps, concrete mixing plants, stockpile areas, storage	Locations may cause encroachment/impact either directly or indirectly on adjacent environments. It may also include the impacts on the people who might lose their homes or livelihoods due to the project activities.
Traffic	Traffic flow will be disrupted if routes for delivery of construction materials and temporary blockages during construction activities are not planned and coordinated.
Construction Phase	
Sources of materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.
Air quality	Emissions from construction vehicles, equipment, and machinery used for excavation and construction resulting to dust and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrous oxides, and hydrocarbons.
Surface water quality	Mobilization of settled silt materials, run-off from stockpiled materials, and chemical contamination from fuels and lubricants during construction works can contaminate downstream surface water quality.

Impact Field	Anticipated Impact on the Environment
Noise levels	Increase in noise level due to earth-moving and excavation equipment, and the transportation of equipment, materials, and people. Operation of heavy equipment and machines in the night time can cause nuisance to the surrounding environment/ people
Ecological resources	Cutting of trees may affect terrestrial ecological balance and affect terrestrial and aquatic fauna/wildlife.
Landscape and aesthetics	Solid wastes as well as excess construction materials create unacceptable aesthetic condition.
Accessibility	Traffic problems and conflicts in right of way.
Occupational health and safety	Occupational hazards which can arise during construction (e.g., falling objects).
Community health and safety	Community hazards which can arise during construction (e.g., air quality, noise, falling objects, etc.). Traffic accidents and vehicle collision with pedestrians during material transport.
Construction waste	Accumulation of debris waste materials and stockpiling can cause environmental visual pollution.
Temporary work camps	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants. This may cause conflict with residents and problem of waste disposal and disruptions to residents.
Social and cultural resources	Risk of archaeological chance finds. Sites of social/cultural importance (schools, hospitals, religious place, tourism sites) may be disturbed by noise, dust, vibration, and impeded access.
Clean-up operations, restoration and rehabilitation	Impacts on social or sensitive receptors when post construction requirements are not undertaken, e.g. proper closure of camp, disposal of solid waste, and restoration of land after project construction.
Operation and Maintenance Phase	
General maintenance	Operation and maintenance activities may cause disturbance to sensitive receptors, dusts, and increase in noise level.
Air Quality	Sensitive receptors (e.g. hospitals, schools, churches) may be affected temporarily by increased traffic and related impacts during collection and hauling of septage to the SpTF.
Community health and safety	Desludging of septic tanks and transport of septage may cause health risks if spilled along the truck route. Traffic and noise nuisance may also occur.
Biodiversity fauna and flora	The proposed site is in a rolling terrain. No areas of ecological diversity occur within the project location. Due to the nature and locality of the project there is unlikely to any significant impacts on biodiversity within the area during maintenance works
Degradation of water quality of receiving body of water during malfunction of the facility	Water quality of the receiving body of water may be adversely affected during malfunction of the facility. However, since the site will be beside the sanitary landfill of the city, the partially treated wastewater can be temporarily diverted to the landfill while repair and maintenance is undertaken.
Health and safety	Danger of operations and maintenance-related injuries. Safety of workers and general public must be ensured.
Noise and Vibrations	Sensitive receptors (hospitals, schools, churches) may be affected temporarily by increased traffic and related impacts Disturbance from afterhours work.
Solid Waste	Solid waste residuals which may be generated by the SPTF such as sludge cake can be utilized as soil conditioner/fertilizers to enhance the fertility of the nearby farmlands.
Wastewater	Treated effluent will be discharged into the receiving body of water. All discharge must meet government prescribed effluent standards (**Appendix 5)**.
Bio-aerosols	Bio-aerosols (i.e., particles in the air consisting wholly or partially of microorganisms) are of particular concern to the health of workers and surrounding communities and have been shown to be the source of reduced pulmonary function and increased respiratory disease for those in immediate proximity of SpTF.

Impact Field	Anticipated Impact on the Environment
Air emissions and odors	Air emissions from wastewater treatment operations may include hydrogen sulfide, methane, volatile organic compounds, gaseous or volatile chemicals used for disinfection processes (e.g., chlorine), and bio- aerosols. Odors from treatment facilities can also be a nuisance to workers and the surrounding community.

Source: PPTA Consultant.

IV. ENVIRONMENTAL ASSESSMENT FOR PROJECTS AND COMPONENTS

A. SUBPROJECT ELIGIBILITY CRITERIA

36. The sector loan will fund water supply and sanitation subprojects, including septage treatment facilities (SpTFs). Improvements in the domestic water supply give rise to greater quantities of wastewater and increase pollution loading in the various environmental media. With SpTFs, the concomitant wastewater would be properly collected, transported and treated prior to discharge, thus safeguarding public health.

37. Subprojects to be funded under the sector loan will be screened based on eligibility criteria, including the following:

(i) Qualifies as ADB's Environment Category B or C in accordance with SPS;

(ii) Will not involve involuntary resettlement and/or dislocation (of any scale/magnitude);

(iii) Will not have significant impacts in terms of Biodiversity Conservation and Sustainable Natural Resource Management such as encroachment into natural/critical/modified habitat/s and/or legally protected areas;

(iv) Project scope/design will not inflict damage to any socio-cultural/historical/ archaeological resource/s of local, provincial, national and/or international importance.

8. Guidelines for subproject selection in **Table 4.1** provide further guidance to avoid or minimize adverse impacts during the identification and finalization of subprojects to be funded under the sector loan.

Table 4.1: Environmental Criteria for Subproject Selection

	Components	Environmental Selection Guidelines	Remarks
1.	Overall Selection Guideline (applicable to all subprojects)	Comply with all requirements of relevant national, state, and local laws, rules, and guidelines.	See Section II of this EARF
		Avoid where possible land acquisition and involuntary resettlement where possible including impacts on vulnerable persons and indigenous peoples.	See Resettlement Framework (RF)
		Avoid where possible locations in protected areas, including notified reserved forests or biodiversity conservation hotspots (wetlands, national reserves, forest reserves, and sanctuaries).	Approval from Protected Area and Wildlife Bureau, if unavoidable
		Project location shall not result in destruction/disturbance to historical and cultural places/values.	
		Avoid where possible, and minimize to extent feasible facilities in locations with social conflicts.	
		Avoid where possible tree cutting and if any trees have to be removed, shall plant 10 new trees for every one that is cut.	Approval from DENR

	Components	Environmental Selection Guidelines	Remarks
		Retain mature roadside trees which are important/valuable or historically significant. If any trees have to be removed, shall plant 10 new trees. for every one that is lost.	
		Avoid involuntary resettlement by prioritizing rehabilitation over new construction, using vacant government land where possible, and taking all possible measures in design and selection of site or alignment to avoid resettlement impacts.	
		Designs must be consistent with SPS and follow the RF prepared for the project and agreed by the Government and ADB.	See RF
		Reflect inputs from public consultation and disclosure for site selection.	All consultations should be documented and concerns expressed by public addressed in IEEs.
2.	Water Supply	Comply with all requirements of relevant national law.	See Section II of this EARF
		Locate all new facilities/buildings at least 100 m from houses, shops or any other premises used by people, thus establishing a buffer zone to reduce the effects of noise, dust and the visual appearance of the site.	Distance restriction may be reviewed depending on site availability, buffer zone planning, and odor-control technology.
		Locate all new facilities/buildings at sites where there is no risk of flooding or other hazards that might impair functioning of or present a risk of damage to existing water treatment plants, reservoirs, or its environs.	
		Consult the National Museum regarding the archaeological potential of proposed sites of buildings, primary mains, and distribution network to ensure that these are located in areas where there is a low risk of chance finds.	
		Avoid all usage of pipes that are manufactured from asbestos concrete.	
		Locate pipelines within road right of way (ROW) as far as possible, to reduce the acquisition of new land.	
		Ensure that pipeline routes do not require the acquisition of land from private owners in amounts that are a significant proportion of their total land holding (>10%).	
		Ensure that communities who relinquish land needed for pipelines or other facilities are provided with an Improved water supply as part of the scheme.	
		Ensure that water supplied to consumers meets national drinking water standards at all times, and confirm this by regular monitoring at the source and in domestic premises.	
		Ensure that improvements in the water supply system are combined with improvements in wastewater and drainage to deal with the increased discharge of domestic. wastewater.	
3.	Facilities/Buildings	Only projects proposed or requested by the relevant agencies shall be considered for	
		Projects shall involve improvements within the boundary of existing facilities only.	

	Components	Environmental Selection Guidelines	Remarks
		Ensure that any facilities involving hazardous or polluting materials (e.g. waste disposal) are designed to meet national and international standards, to protect human health, both within and outside the facility.	
		Where new facilities are required, these shall be sited on vacant government land and ROWs where feasible.	
		Ensure that water and waste disposal in constructed facilities are designed to national and international standards.	
4.	Septage Treatment Facility	Comply with all requirements of relevant national, state, and local laws, rules, and guidelines.	See Sec. II of this EARF.
		Site selection process shall avoid where possible land acquisition and involuntary resettlement where possible including impacts on vulnerable persons and indigenous peoples.	See RF and Indigenous Peoples Planning Framework.
		Locate SpTF preferably 50 m from any inhabited areas, in locations where no urban expansion is expected in the next 20 years, so that people are not affected by odor or other nuisance from the SpTF.	Distance restriction may be reviewed depending on the technology adopted for the treatment of wastewater, site plant availability and buffer zone planning.
		Locate SpTF at sites where there is a suitable means of disposal for the treated wastewater effluent.	
		Locate SpTF at sites where there is no risk of flooding or other hazards that might impair functioning of the SpTF and present a risk of damage to the plant or its environs.	Flood statistics data of the Project area needs to be reviewed
		Consult the relevant records of national and/or local archaeological agencies regarding the archaeological potential of proposed sites of SpTF.	

Source: PPTA Consultant.

38. The water supply and SpTF subprojects in the two pilot WDs (listed in **Appendix 1)** are classified as Environment Category B in accordance with SPS. The environmental impact assessments concluded that the subprojects of the pilot WDs will have only small-scale, localized and temporary impacts on the environment which can be readily mitigated. The potential adverse environmental impacts are mainly related to the construction period, which can be minimized by the mitigating measures and environmentally sound engineering and construction practices. The negative impacts of the SpTF during operation and maintenance phase can be prevented or minimized with appropriate mitigating measures. Therefore, no significant environmental impacts are anticipated. Sample IEEs were prepared for CKWD's water supply and SpTF subprojects. Mitigation measures and monitoring plans were proposed in the Environmental Management Plan (EMP) which forms part of the IEEs. The EARF shall be adopted for each subproject's environmental assessment and review.

B. ADB Environmental Assessment Procedures for the Subprojects

3.1 Screening and Classification/Categorization

39. A rapid environmental assessment (REA) using the ADB REA Checklist has been conducted on CKWD's water supply and SpTF subprojects. **Appendix 6** presents the REA Checklist for water supply subproject while **Appendix 7** shows the REA Checklist for SpTF

subproject. The completed REA Checklists for each subproject will be attached in the IEEs for ADB review, to ensure that the subproject meets ADB's environmental safeguard requirements, as stipulated in SPS. Subprojects will be screened, and the level of environmental assessment required (EIA/IEE) will be determined. While an environmental assessment will not be required for Category C subprojects, environmental implications will be reviewed.

3.2 Preparation of Environmental Assessment Report

40. Environmental assessment documents prepared for all subprojects to be funded under the sector loan will, to the extent possible, meet both ADB and Philippine government requirements, in order to streamline the environmental procedures required by both ADB and the government.

41. An IEE is required for subprojects with some adverse environmental impacts but which are expected to be less significant than those of Category A subprojects.[5] Appendix 1 of SPS provides the specific outlines and contents to be followed while preparing EIAs/IEEs. **Appendix 8** provides the outline of an ADB EIA or IEE Report. Also, the IEEs prepared for CKWD's water supply and SpTF subprojects during project preparation provides good sample, which can be followed for the preparation of environmental assessments of other subprojects.

42. For preparing EIAs and IEEs, relevant primary data will be generated and secondary data will be collected for project-influenced sites. An assessment of project impacts and risks on biodiversity and natural resources will also be undertaken. Issues regarding natural and critical habitats will be covered in the EIA/IEE report. In case of projects located within the buffer zone of protected areas, a review of management plans and consultation with concerned management staff of the protected area, local communities, and key stakeholders will be undertaken and reflected in EIA/IEE report. Pollution prevention for conservation of resources particularly technology for management of process wastes will be addressed in the EIA/IEE report. Occupational health safety and community health safety will be properly addressed in the EMP section of the EIA/IEE report. In case subprojects are likely to have adverse impacts on physical cultural resources, appropriate mitigation measures will to be planned and reflected in the EIA/IEE. EIA/IEE will also reflect meaningful consultation and disclosure process with a provision of grievance redress mechanism.

43. ADB requires that an EMP must be developed as part of the EIAs/IEEs. EMPs describe the environmental management measures that will be carried out to mitigate negative impacts or enhance the environment during implementation of a project, and the environmental monitoring to be conducted to ensure that mitigation is provided and is effective in reducing impacts, or to determine the long-term impacts of a subproject. EMPs will outline specific mitigation measures, environmental monitoring requirements, and related institutional arrangements, including budget requirements for implementation. Where impacts and risks cannot be avoided or prevented, mitigation measures and actions will be identified so that the project is designed, constructed, and operated in compliance with applicable laws and regulations and meets the requirements specified in this document. The level of detail and complexity of the environmental planning documents and the priority of the identified measures and actions will be commensurate with the project's impacts and risks. Key considerations include mitigation of potential adverse impacts to the level of "no significant harm to third

[5] Subprojects expected to have potentially significant adverse environmental impacts (categorized as A) will not be eligible for funding under the sector loan.

parties," the polluter pays principle, the precautionary approach, and adaptive management.

44. If some residual impacts are likely to remain significant after mitigation, the EMP will also include appropriate compensatory measures (offset) that aim to ensure that the project does not cause significant net degradation to the environment. Such measures may relate, for instance, to conservation of habitat and biodiversity, preservation of ambient conditions, and greenhouse gas emissions. Monetary compensation in lieu of offset is acceptable in exceptional circumstances, provided that the compensation is used to provide environmental benefits of the same nature and is commensurate with the project's residual impact.

45. All EIAs/IEEs and EMPs will be conducted prior to the award of construction contracts. The bid documents will include the requirement to incorporate necessary resources to implement the EMP. The EMP will form part of the contract document, and, if required will need to be further updated during the construction phase of a project.

3.3 Environmental Audit of Existing Facilities

46. For subprojects involving facilities and/or business activities that already exist or are under construction, the WDs will undertake an environment audit, including on-site assessment, to identify past or present concerns related to impacts on the environment. The objective of the compliance audit is to determine whether actions were in accordance with ADB's safeguard principles and requirements for borrowers/clients and to identify and plan appropriate measures to address outstanding compliance issues. Where noncompliance is identified, a corrective action plan agreed on by ADB and the implementing agencies will be prepared. The plan will define necessary remedial actions, the budget for such actions, and the time frame for resolution of noncompliance. The audit report (including corrective action plan, if any) will be made available to the public in accordance with the information disclosure requirements of SPS. For environment category A projects involving facilities and/or business activities that already exist or are under construction, the implementing agency will submit the audit report to ADB to disclose on ADB's website at least 120 days prior to ADB Board approval. If a project involves an upgrade or expansion of existing facilities that has potential impacts on the environment, the requirements for environmental assessments and planning specified in SPS will apply in addition to compliance audit.

C. REVIEW OF ENVIRONMENTAL ASSESSMENT REPORTS

47. On completion, EIAs/IEEs will be reviewed initially by the PMU and the respective WDs and submitted to ADB. In the case an ECC is required, the EIAs/IEEs are to be submitted to the EMB Regional Office for application of an ECC. Processing of the ECC application will follow the Philippine EIA process outlined in **Figure 2.2** leading to the issuance of ECC.

48. It is the responsibility of the executing and implementing agencies to ensure that subprojects are consistent with the legal framework, whether national or municipal/local. Other environmental permits as presented in Table 2.2 shall also be complied with in all stages of the project including design, construction, and operation and maintenance.

V. CONSULTATION, INFORMATION DISCLOSURE, AND GRIEVANCE REDRESS MECHANISM

A. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

49. Meaningful stakeholder consultation and participation is part of the project preparation and implementation strategy. A Consultation and Participation Program has been conducted for the Investment Plan and will be implemented with the assistance of consultants, non-government organization (NGO), and media contractors. By addressing stakeholder needs, there is greater awareness of the benefits, and 'ownership' of the Investment Plan among stakeholders, which in turn contributes to sustainability. The consultation process during the project preparation has solicited inputs from a wide range of stakeholders, including government officials, NGOs, residents in the vicinity of the subproject sites, marginalized/vulnerable beneficiary groups, and project affected persons (APs).

50. Consultation, participation and disclosure will ensure that information is provided and feedback on proposed project design is sought early, right from the project preparation phase, so that the views/preferences of stakeholders including potential beneficiaries and affected people can be adequately considered in project design, and continue at each stage of project preparation, processing, and implementation. Affected persons will be consulted at various stages in the project cycle to ensure: (i) incorporation of views/concerns of APs on compensation/resettlement assistance and environmental impacts and mitigation measures; (ii) inclusion of vulnerable in project benefits; (iii) identification of help required by APs during rehabilitation, if any; and (iv) avoidance of potential conflicts/smooth project implementation. It will also provide adequate opportunities for consultation/participation to all stakeholders and inclusion of the poor/vulnerable/marginalized and project-affected persons in the project process. Relevant information about any major changes to project scope will be shared with beneficiaries, affected persons, vulnerable groups, and other stakeholders.

51. A variety of approaches can be adopted. At minimum, stakeholders will be consulted regarding the scope of the environmental and social impact study before work is commenced and they will be informed of the likely impacts of the project and proposed mitigation once the draft EIA/IEE, Resettlement Plan, and Indigenous People Plan reports are prepared. The reports will record the views of stakeholders and indicate how these have been taken into account in project development. Consultations will be held with a special focus on vulnerable groups.

52. The key stakeholders to be consulted during project preparation, EMP implementation, and project implementation include:

(i) Beneficiaries;
(ii) Elected representatives, community leaders, religious leaders and representatives of community based organizations;
(iii) Local NGOs;
(iv) Local government and relevant government agency representatives, including local authorities responsible for land acquisition, protection and conservation of forests and environment, archaeological sites, religious sites, and other relevant government departments;
(v) Residents, shopkeepers and business people who live and work alongside the roads where pipes will be lay and near sites where facilities will be built;
(vi) Custodians, and users of socially and culturally important buildings;
(vii) WDs representatives and consultants, and
(viii) ADB representatives.

B. INFORMATION DISCLOSURE

53. Information is disclosed through public consultation and making relevant documents available at public locations. The following documents will be submitted to ADB for disclosure on its website for category B projects:

(i) final IEE;
(ii) a new or updated IEE and corrective action plan prepared during project implementation, if any; and
(iii) environmental monitoring reports.

54. The EA and the IAs will send written endorsement to ADB for disclosing these documents on ADB's website also provide relevant safeguards information in a timely manner, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. For illiterate people, other suitable communication methods will be used.

C. GRIEVANCE REDRESS MECHANISM

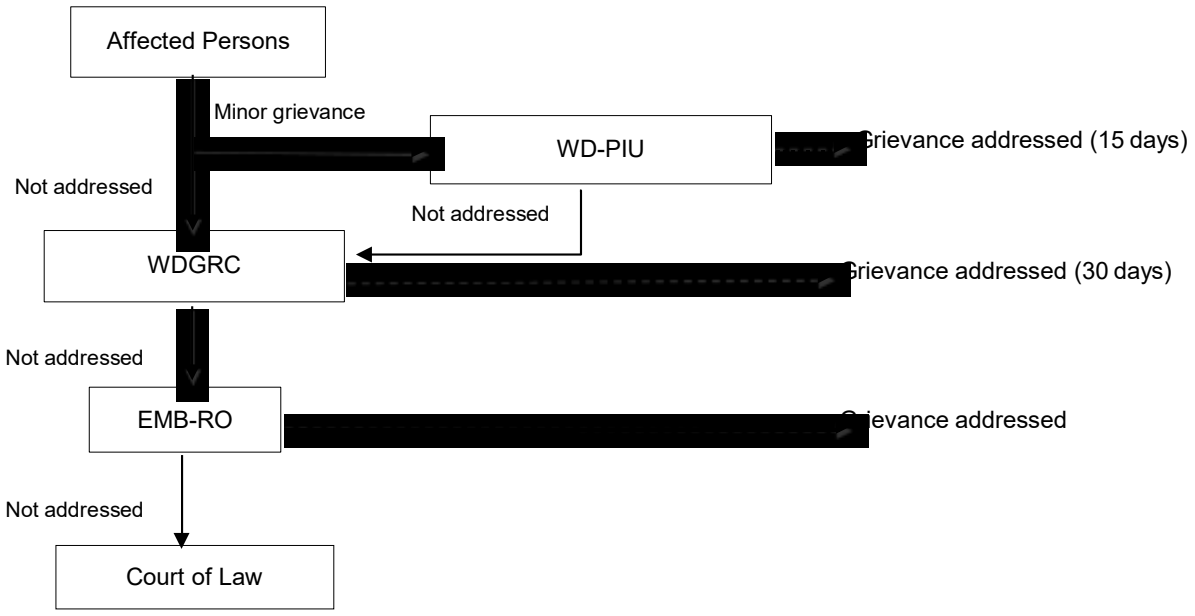
55. **Common Grievance Redress Mechanism.** A subproject-specific common grievance redress mechanism (GRM) will be established at the WD to receive, evaluate and facilitate the resolution of affected persons (APs) concerns, complaints and grievances about the social and environmental performance at the level of the subproject. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the subproject. This mechanism shall be disclosed in public consultations during detailed design and in meetings during the construction phase.

56. Each WD shall appoint a Social Development and Safeguards Officer (Safeguards Officer) in its PIU, and will form the Water District Grievance Redress Committee (WDGRC) to be chaired by the Water District-General Manager. Members shall include the following: (i) the contractor's highest official at the site such as the Construction Manager or the Construction Superintendent, (ii) barangay officials, (iii) concerned NGOs, and (iv) women's organizations. Creation of the WDGRC and its operation shall be included in appropriate sections of the civil works contract. Expeditious resolution of complaints during construction is important since activities are sometimes continuous and can easily change the landscapes within a week. For the quick filing of complaints, the WDGRC shall prepare a form to be used for the filing of grievances/complaints. The use of form will also facilitate the filing of complaints by illiterate persons. **Appendix 9** has the Sample Grievance Registration Form. Careful documentation of the name of the complainant, date of receipt of the complaint, address/ contact details of the person, location of the problem area and how the problem was resolved, will be undertaken. The WD's SDSO will be responsible for timely grievance redressal on environmental and social safeguards issues and responsible for registration of grievances, related disclosure and communication with the aggrieved party.

57. **Grievance Redress Process.** The steps to be followed in filing complaints and the procedures for redress are the following: (i) complainant shall provide the background and file the complaint verbally or in writing to WDGRC, and the Safeguards Officer or other WD personnel on site shall assist the complainant in filling-up the complaint form; (ii) within 2 working days, the WD-PIU head, contractor's representative, and complainant shall discuss if the complaint can be resolved without calling for a WDGRC meeting; (iii) if the complaint cannot be resolved by the WD-PIU head and contractor's representative, a WDGRC meeting shall be called within 5 working days with the complainant to resolve the complaint; (iv) if the complaint cannot be resolved by the WDGRC within 30 days, the complainant shall raise the issue to the EMB-Region Office; and (v) if the complaint cannot be resolve at the EMB level, the complainant shall seek recourse with the courts. If the complaints are based on violations of the

ECC terms and conditions, the complainant has an option to also bring the issue to EMB-Regional Office. **Figure 4** shows the grievance redress process.

Figure 4: Grievance Redress Process



WD=Water District, PIU=Project Implementation Unit, WDGRC=Water District Grievance Redress Committee, EMB-RO=Environmental Management Bureau-Regional Office.

58. **Record-keeping.** Records will be kept by each WD-PIU of all grievances received including contact details of complainant, date the complaint was received, nature of grievance, agreed corrective actions and the date these were effected, and final outcome.

59. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the respective WD offices, LWUA's office, as well as reported in monitoring reports submitted to ADB on semi-annual basis.

60. **Periodic Review and Documentation.** The WD's Safeguards Officer will periodically review the functioning of the GRM and record information on the effectiveness of the mechanism, especially on the project's ability to prevent and address grievances.

61. **Costs.** All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the concerned WD; cost estimates for grievance redress are included in resettlement cost estimates.

62. **Complaints to the Department of Environment and Natural Resources.** Complaints about environmental performance of projects issued an Environmental Certificate of Compliance (ECC) can also be brought to the attention of DENR-EMB. The process of handling such complaints is described in the *Revised Procedural Manual (2007)* for the IRR of PD 1586. The steps that DENR-EMB may follow in handling complaints are: (i) DENR-EMB shall verify if the

complaint is actionable under PD.1586, (ii) within 72 hours from receipt of a complaint DENR-EMB will send the proponent a Notice of Alleged Violation (NAV) and requests for an official reply as to why the proponent should not be penalized, (iii) DENR-EMB may conduct field validation, site inspection and verification or other activities to assess or validate the complaint. The proponent is allowed to respond within seven days. Proponent's failure to respond to the NAV and further notices will force DENR-EMB to take legal actions. DENR may issue a Cease and Desist Order (CDO) to project proponents which shall be effective immediately based on: (i) violations under the PEISS, and (ii) situations that present grave or irreparable damage to the environment. PD 1586 also allows DENR to suspend or cancel the proponent's ECC if the terms and conditions have been violated.

VI. INSTITUTIONAL ARRANGEMENTS AND RESPONSIBILITIES

A. IMPLEMENTATION ARRANGEMENTS – WATER SUPPLY AND SEPTAGE MANAGEMENT

63. **Executing and Implementing Agencies.** For all subprojects, LWUA is the EA and WDs are the IA s. LWUA has overall responsibility for project coordination, implementation, and liaison with ADB and other government offices. LWUA will establish a Project Management Unit (PMU) to coordinate implementation at the national level. The PMU will be responsible for: (i) preparation and implementation of the each subproject, including procurement of goods, works, and services; (ii) management of project implementation consultants; (iii) disbursement of funds and recovery of loan repayments; and (iv) conducting overall monitoring and evaluation, including the preparation of necessary reports, with the help of the implementation consultants. A PMU staff shall be designated as the Safeguards Officer for the WD's subproject.

64. **Water District's Project Implementation Unit (PIU).** During the construction phase, each participating WD will establish a PIU to work closely with the PMU. The WD will provide all the necessary logistic support (vehicle, computers, support staff, etc.) to the PIU for carrying out the related activities for environmental and social safeguard implementation and monitoring. The WD will ensure that bidding and contract documents include specific provisions requiring contractors to comply with all applicable labor laws and core labor standards on (i) prohibition of child labor as defined in national legislation for construction and maintenance activities; (ii) equal pay for equal work of equal value regardless of gender, ethnicity, or caste;
(iii) elimination of forced labor; and (iv) the requirement to disseminate information on health to employees and local communities surrounding the project sites.

65. The PIU will be responsible for implementing and monitoring safeguards compliance activities, public relations activities, gender mainstreaming activities, and community participation activities. The PIU will have a Social Development and Safeguards Officer (SDSO), who will be responsible for safeguards functions. The responsibilities of the PIU's SDSO are to: (i) ensure that the EARF provisions are observed, such as ensuring that works are selected according to the environmental criteria for subproject selection;
(ii) review and approve IEEs and EMPs; (iii) confirm existing IEEs and EMPs are updated based on detailed designs; (iv) confirm whether the EMPs are included in bidding documents and civil works contracts; (v) provide oversight on environmental management aspects of the subprojects and ensure the EMPs are implemented by contractors; (vi) establish a system to monitor environmental safeguards of all subprojects including monitoring the indicators set out in the monitoring plan of the EMPs; (vii) facilitate and confirm overall

compliance with all government rules and regulations regarding site and environmental clearances as well as any other environmental requirements, as relevant; (viii) review, monitor and evaluate the effectiveness with which the EMPs are implemented, and recommend necessary corrective actions to be taken as necessary; (ix) consolidate monthly environmental monitoring reports and submit semi-annual monitoring reports to EMB-RO, LWUA, and ADB; (x) ensure timely disclosure of final IEE/EMP in locations and form accessible to the public; and (xi) address any grievances brought about through the GRM in a timely manner. The monitoring report will focus on the progress of implementation of the IEEs and RPs, issues encountered and measures adopted, follow-up actions required, if any, as well as status of compliance with relevant subloan covenants.

66. **Contractors.** Each Contractor will have an Environment Supervisor or pollution control officer to (i) coordinate with the WD on updating the IEE/EMP based on detailed designs, and (ii) ensure implementation of the EMP during civil works.

B. INSTITUTIONAL CAPACITY DEVELOPMENT PROGRAM

67. Each WD will organize training of the PIU, and staff on environmental awareness and management in accordance with both ADB and government requirements. Specific modules customized for the available skill set will be devised after assessing the capabilities of the target participants and the requirements of the project. The entire training will cover basic principles of environmental assessment and management; mitigation plans and projects, implementation techniques, monitoring methods and tools. Typical modules that will be present for the training session would be as follows: (i) sensitization; (ii) introduction to environment and environmental considerations in water supply and wastewater projects;
(iii) review of IEEs and integration into the project detailed design; (iv) improved coordination within nodal departments; and (v) monitoring and reporting system. Each Contractor will be required to conduct environmental awareness and orientation of workers prior to deployment to work sites.

C. STAFFING REQUIREMENT AND BUDGET

68. The costs for environmental safeguard activities will be borne by the WDs. The cost of mitigation measures and surveys during construction stage will be incorporated into the contractor's costs, which will be binding on him for implementation.

69. The operation phase mitigation measures are again of good operating practices, which will be the responsibility of the WDs. All monitoring during the operation and maintenance (O&M) phase will be conducted by WDs as part of their O&M costs.

VII. MONITORING AND REPORTING

70. The PIU will monitor and measure the progress of EMP implementation. The monitoring activities will be corresponding with the project's risks and impacts and will be identified in the EIAs/IEEs for the projects to verify compliance with the EMP and progress toward the final outcome. The PIU will submit semi-annual monitoring reports the PMU and to ADB. Project budgets will reflect the costs of monitoring and reporting requirements.

71. For subprojects likely to have significant adverse environmental impacts, WDs will retain qualified and experienced external experts to verify its monitoring information and will

submit quarterly self-monitoring reports to EMB Regional Office.

72. ADB will review subproject performance against the WDs' and LWUA's commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the subproject's risks and impacts. Monitoring and supervising of social and environmental safeguards will be integrated into the project performance management system. ADB will monitor subprojects on an ongoing basis until a project completion report is issued. ADB will carry out the following monitoring actions to supervise project implementation:

(i) Conduct periodic site visits for subprojects with adverse environmental or social impacts;
(ii) Conduct supervision missions with detailed review by ADB's safeguard specialists/officers or consultants for subprojects with significant adverse social or environmental impacts;
(iii) Review the periodic monitoring reports submitted by the EA to ensure that adverse impacts and risks are mitigated as planned and as agreed with ADB;
(iv) Work with the EA to rectify to the extent possible any failures to comply with their safeguard commitments, as covenanted in the legal agreements, and exercise remedies to re-establish compliance as appropriate; and
(v) Prepare a project completion report that assesses whether the objective and desired outcomes of the safeguard plans have been achieved, taking into account the baseline conditions and the results of monitoring.

APPENDIX 1
PILOT WATER DISTRICTS' WATER AND SANITATION SUBPROJECTS

Pilot Water District	Subproject	Details
City of Koronadal WD	Water Supply	In each of five unserved barangays, a new well source, pumping and treatment facilities, a reservoir, new transmission and distribution lines
City of Koronadal WD	Septage Treatment Facility	Construction of a septage treatment facility, procurement of vacuum trucks
Metro San Fernando (La Union) WD	Water Supply	Eight new deepwells and a treatment facility at each, two new reservoirs, rehabilitation of an existing reservoir, new transmission and distribution lines

APPENDIX 2
DENR-EMB List of Environmentally Critical Projects (ECPs) and Environmentally Critical Areas (ECAs)

In accordance with Presidential Proclamation No. 2146, series of 1981 and Proclamation No. 803 (Series of 1996), the four (4) main categories of ECPs are (1) heavy industries; (2) resource extractive industries; (3) infrastructure projects and (4) golf course projects.

1. Heavy Industries

    - Non-Ferrous Metal Industries
    - Iron and Steel Mills
    - Petroleum and Petrochemical Industries
    - Smelting Plants

2. Resource Extractive Industries

    - Non-Ferrous Metal Industries
    - Major Mining and Quarrying Projects
    - Forestry Projects
    - Dikes for/and Fishpond Development Projects

3. Infrastructure Projects

    - Major Dams
    - Major Power Plants
    - Major Reclamation Projects
    - Major Roads and Bridges

4. Golf Course Projects

In accordance with Presidential Proclamation No. 2146, series of 1981, there are twelve (12) main categories of ECAs:

1. Areas declared by law as national parks, watershed reserves, wildlife preserves, and sanctuaries
2. Areas set aside as aesthetic, potential tourist spots
3. Areas which constitute the habitat for any endangered or threatened species of indigenous Philippine Wildlife (flora and fauna)
4. Areas of unique historic, archeological, geological, or scientific interests
5. Areas which are traditionally occupied by cultural communities or tribes
6. Areas frequently visited and or hard-hit by natural calamities
7. Areas with critical slope
8. Areas classified as prime agricultural lands
9. Recharge areas of aquifers
10. Water bodies
11. Mangrove Areas
12. Coral Reefs

APPENDIX 3
INITIAL ENVIRONMENTAL EXAMINATION (IEE) CHECKLIST REPORT for Water Supply Projects

INITIAL ENVIRONMENTAL EXAMINATION (IEE) CHECKLIST REPORT

for

Water Supply Projects

Below is the IEE Checklist for Proponents of the following projects:

Project	Project Size Parameter	Corresponding Project Size/Threshold
Water Supply Systems (Complete System)	number of production wells	≤ 6 wells

Read the questions carefully and write the required information on the spaces provided or otherwise check (✓) the appropriate boxes ☐ or parenthesis ( ). Use additional sheets if necessary and indicate this in the appropriate space.

Project proponents are strongly **discouraged** to engaged the services of consultants/facilitators to accomplish/fill-up the IEE Checklist Report Form. The Report Forms have been designed to be user-friendly.

Furthermore, EMB Regional Office are required to complete the processing of an ECC application using the IEE Checklist Report within twenty (20) working days upon receipt for completed/duly-accomplished forms.

Misleading or erroneous answers are basis for legal actions and/or denial of ECC issuance.

PROJECT FACT SHEET

Project Name:

Project Location: _____

_____

(Attach proof of compatibility with the existing Land Use Plan)

Total Project Land Area: _____

(Attach proof of ownership or authority over the project site e.g. Title, Lease Agreement, ROW, etc.)

Total Project/Building Footprint Area

(Area actually utilized)

Project Proponent: _____

Office Address: _____

Contact Person: _____

Designation: _____

Contact Information

Telephone Number: _____

Fax Number: _____

Mobile Number: _____

E-mail Address: _____

I. PROJECT DESCRIPTION

1.1 PROJECT LOCATION AND AREA: Street Name, Barangay, and Municipality/City

_____

_____

_____

Attach vicinity map/s and photographs of the project site and site development/layout plan.

Geographic coordinates of the project area (Preferably use WGS 84 datum, otherwise specify datum used).

Perimeter/Boundary points (based on OCT/TCT/etc)	Longitude	Latitude

1.2 PROJECT COMPONENTS

	Facilities	Number of Units	Specification/Description/Remarks (Include capacity, length or other size description)
1.	Water collection		
	Production wells		
	Infiltration gallery		
	Diversion/Collection Weir		
	Others, specify		
2.	Water treatment facility		
	Chemical treatment (e.g., precipitation, coagulation, etc.)		
	Physical treatment (e.g., screening, sedimentation, etc.)		
	Disinfection (e.g., chlorination, etc.)		
3.	Water distribution system		(indicate service area in m^2 and number of households served) _____ square meters _____ households
	Communal box/faucet (new)		
	Communal box/faucet (for rehabilitation)		
	Water pipelines, distribution main (new)		
	Water pipelines distribution main (for rehabilitation)		
	Water pipelines, service line (new)		
	Water pipelines service line (for rehabilitation)		
	Pumping stations		
4.	Chemical storage facility		
5.	Waste water management facility		
6.	Solid waste management facility		
7.	Drainage System		
8.	Others, specify		

(Use additional sheets if needed)

_____

1.3 UTILITIES/REQUIREMENTS (Operation Phase):

Utilities	Source	Estimated Demand/Consumption
Power/Electricity **(Total)**		KWh
Power/Electricity **(From Renewable Energy Sources)**		KWh
Water **(Total)** (Fill-up table below if water is not obtained from the local water utility)		m^3/day
Water **(Rainwater Collection System)**		m^3/day

Water Source

[ ] ground water [ ] well [ ] spring [ ] others: _____

[ ] Surface water [ ] river [ ] lake [ ] others: _____

Location of water source

_____

(Sitio/Zone, Barangay, Municipality/City, Province, Region)

Energy/Water Efficiency

Utilities	Estimated Savings	Proposed Efficiency/Conservation Measures
Power/Electricity	KWh	
Water	m^3/day	

1.4 MANPOWER

a. **Construction Phase**

Manpower Requirement	Expertise/Skills	Total

b. **Operation Phase**

Manpower Requirement	Expertise/Skills	Total

1.5 INDICATIVE PROJECT COST

Project Cost (PhP): _____

II. ENVIRONMENTAL IMPACTS AND MANAGEMENT PLAN

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
LAND				
☑ Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify: _____ Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others, specify:_____	☑ See attached proof of compatibility with land use		
☐ Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: ☐ Forestland ☐ Marshland ☐ Grassland ☐ Mangrove ☐ Wetland ☐ Others, specify:_____	☑ Compliance with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit ☑ Limit land clearing as much as possible ☑ Provide temporary fencing to vegetation that will be retained ☑ Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting);	☑ Annual inspection of area replanted/ revegetated	☑ Cost integrated in the construction /operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
☐ Change in surface landform/ topography/ terrain/slope ☐ Soil Erosion	Slope: ☐ flat (0-3%) ☐ gently sloping to rolling (3-18%) ☐ steep (>18%) Is the project site located in an area identified by MGB/PAGASA/PHIVOLCS as hazard prone? ☐ Yes ☐ No	☐ Provide erosion control and slope protection measures ☐ Designate a Spoils Storage Area, with topsoil set aside for later use and allow maximum re-use of spoils ☐ Construction during dry season ☐ Stabilization of embankment with grasses or other soil cover ☐ Others, specify: _____ ☐ Compliance with the DENR Administrative Order No. 96-37 and DENR Administrative Order No. 2000-28, Implementing Guidelines on Engineering Geological and Geo-hazard Assessment (EGGA).	☐ Regular inspection of slope protection measures in erosion-prone areas ☐ Regular inspection for new eroded areas near the site ☐ Others, specify: _____	☐ Slope/ Erosion Control Cost: _____ ☐ Others, specify: _____
☑ Soil/Land contamination due to improper solid waste disposal	Existing soil type in the area: ☐ sandy ☐ clay ☐ sandy-loam ☐ Others, specify: _____	☑ Implementation of the Ecological Solid Waste Management Plan (ESWMP) ☐ Set-up temporary fence around the construction area ☑ Implement re-use and recycling of waste materials ☑ Implement proper segregation, collection and disposal of domestic wastes in designated areas ☐ Implement proper collection, labeling and storage of hazardous waste ☑ Provide receptacles / bins for solid wastes ☐ Coordinate with the municipal / city waste collectors ☐ Engage third party company for waste collection ☐ Others, specify: _____	☑ Daily inspection of waste/recycling bins for segregation ☑ Daily inspection for presence of mixed garbage in the facility ☑ Weekly inspection of waste accumulated ☐ Others, specify: _____	☑ Cost integrated in the construction /operation cost

zc

❑ sc

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
	Current Water Use: ☐ Fishery ☐ Tourist Zone / Park ☐ Recreational ☐ Industrial ☐ Agricultural			
	Distance of project area to the nearest well used: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Use of the nearest well: ☐ Drinking/Domestic ☐ Industrial ☐ Agricultural			
☐ Competition in water use ☐ Depletion of water resources	Size of population using receiving surface water: ☐ ≤ 1,000 persons ☐ >1,000 and ≤ 5,000persons ☐ >5,000person Available/nearest water source: ☐ Deepwell ☐ Water district/LGU ☐ Surface water ☐ Others, specify: _____	☐ Implement rainwater harvesting and similar measures as an alternative source of water ☑ Observe water conservation measures; ☑ Careful selection of project site to avoid disruption of traditional water uses ☑ Obtain Water Permit from NWRB ☑ Improve efficiency of water supply and distribution system ☐ Implement community ponds and similar measures as alternative water source for non-domestic uses ☑ Increase, when practical, storage capacities of water supply structures for resilience to greater climate variations and extremes ☐ Others, specify: _____	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regularly monitor occurrences of water shortages ☐ Others, specify: _____	☑ Cost integrated in the construction/ operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
☐ Increased occurrence of flooding	Is the project site located in an area identified by MGB/PAGASA as flood prone? ☐ Yes ☐ No	☐ Use appropriate design for project facilities ☐ Implement appropriate drainage system ☐ Regularly remove debris and other materials that may obstruct water flow ☐ Use appropriate technology (e.g. raised hand-pumps) to protect drinking water from flood contamination ☐ Others, specify: _____	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regularly monitor increased frequency of flooding ☐ Others, specify: _____	☑ Cost integrated in the construction/ operation cost
AIR / NOISE				
☐ Air quality degradation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all emission sources (e.g. vehicles, pumps, generator, etc) ☐ Install when applicable, the appropriate air pollution control device/s ☐ Strictly enforce good housekeeping practices ☐ Control vehicle speed to lessen suspension of road dust ☐ Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents ☐ Use covered vehicles to deliver materials that may generate dust ☐ Other, specify: _____	☑ Regularly monitor presence/absence of complaints Regular (ocular) inspection of: ☐ Absence of white or black smoke from vehicles, generator, etc. ☐ Presence of truck cover during deliveries	☑ Cost integrated in the construction/ operation cost
☐ Nuisance due to noise generation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all noise sources (e.g. vehicles, pumps, generator, etc) ☐ Install when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) ☐ Implement appropriate operating hours	☑ Regularly monitor presence/absence of complaints ☐ Regular monitoring of buffer zones	☑ Cost integrated in the construction/ operation cost

P EOPLE

☐ Displacement of Indigenous People

Size of population of host barangay

Promptly pay local taxes and other financial obligations

☑ Regular coordination with LGU

LGU

☐ Others, specify

LGU

☐ Rura

☐ Provide appropriate traffic/warning signs, lighting, etc

☐ Impacts on community

☑ Regular coordination with LGU

☑ Regularly monitor

☑ Cost integrated in the

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
		☑ Observe proper housekeeping ☐ Provide on-site medical services for any emergency. ☐ Participate in public awareness programs on health and safety ☐ Implement appropriate safety programs for both community and workers ☑ Strictly comply with fire, safety and similar regulatory requirements ☐ Strictly comply with requirements of RA 6969 ☐ Others, specify: _____	LGU ☑ Regularly monitor submission of reports to concerned agency ☐ Others, specify: _____	

III. ABAIG DONME UT BE COMMI8 0IONING JRE I4ABI L17 A7ION POLIN IE B ID
GEIJ ERIC GUID ELINES I I top cube I

Project Life or Service : years
Provide description of the Aoandonment activities, such as, dismantling and waste

V. INSTITUTIONAL PLAN FOR EMP IMPLEMENTATION

Attach drawing/plan of air pollution source and control installations (with dimensions and descriptions)

Process Flow

Attach drawing/plan of waste water treatment facility (with dimensions and descriptions)

THORN 8TATEMENT OF ACCOUMTABIW Y OF TIN E E'ROPONENT

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- Conform with pertinent provisions of applicable environmental laws e.g., R.A. No. 6969 (*Toxic Substances and Hazardous and Nuclear Management Act of 2000*), R.A. No. 9275 (*Philippine Clean Water Act of 2004*), and R.A. No. 8749 (*Philippine Clean Air Act of 1999*).
- Ao+be ant cznfom MA LGU OeYeJcgmelt plan z+a plumes Prornpoy pay lxl taxes ma otrer maul ai aons
- Regularly submit reports to concerned agencies

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In witness whereof, I hereby set my hand this ____ day of _____ at _____

NAME OF PRUANENT NEAD
iPasl#a }
i Wpziy In we i

SUBSCRIBED AND SWORN TO before me this day of 201__, affiant exhibiting his/her Community Tax Certificate No. _____ _____

Doc. loo. _____

Book No. _____

APPENDIX 4
INITIAL ENVIRONMENTAL EXAMINATION (IEE) CHECKLIST REPORT for Waste Management Projects

WASTE M IAGEH ENT PR€M ECT

INFRLL EM/1RONMEMTAL EXAMNAT g |IEE] CHECKLIST

Below is the IEE Checklist Report for Waste Management Projects.

PROJECT FACT SHEET

Project Name: _____

Project Location: _____

(Attach proof of compatibility with the existing Land Use Plan)

Total Project Land Area: _____

(Attach proof of ownership or authority over the project site e.g. Title, Lease Agreement, ROW, etc.)

Total Project/Building Footprint Area _____

(Area actually utilized)

Project Proponent: _____

Office Address: _____

Contact Person: _____

Designation: _____

Contact Information

Telephone Number: _____

Fax Number: _____

Mobile Number: _____

E-mail Address: _____

I. PROJECT DESCRIPTION

1.1 PROJECT LOCATION AND AREA: Street Name, Barangay, and Municipality/City

_____

_____

_____

Attach vicinity map/s and photographs of the project site and site development/layout plan.

Geographic coordinates of the project area (Preferably use WGS 84 datum, otherwise specify datum used).

Perimeter/Boundary points (based on OCT/TCT/etc)	Longitude	Latitude

1.2 PROJECT COMPONENTS

Facilities	No. of Units	Area (sq. m.) / Capacity	Specification/ Description / Remarks
1. Receiving facility			
Transfer station			
Segregation/Sorting facilities			
Mechanized Materials Recovery Transport and Facility (MRTF)			
Recycling facility			
Waste inspection and quarantine area			
Weigh Bridge			
Vehicle Washing Facilities			
Crusher			
Others (Please specify)			
2. Treatment and disposal facility			
Waste reception area			
Waste quarantine area			
Waste emplacement cells			
Ponds and lagoons			
Composting area			
Others:_____ _____			
3. Support Facilities			
Road/access system			
Drainage system			
Landfill Gas Collection/ Recovery Facility			
Gas venting/ temporary flare			
Leachate collection and treatment facility			
Electrical / Genset Room			
Building for Composting Plant			
Pump Room			
Fuel storage and dispensing facility			
Power Supply System			
Water Supply System			
Others: (please specify) _____			
4. Admin support			
Administration Building			
Guard House			
Engineering Office			
Clinic			
Mess Hall/Canteen			
Personal Quarters			
Motor Pool			
Stalls/Storage			
Trucks Wait Area/ Parking			
Public Toilet			
Laboratory			
Others: (please specify) _____			
5. Water source / supply			
6. Others (please specify) _____ _____			

1.3 **UTILITIES/REQUIREMENTS** (Operation Phase):

Utilities	Source	Estimated Demand/Consumption
Power/Electricity **(Total)**		KWh
Power/Electricity **(From Renewable Energy Sources)**		KWh
Water **(Total)** (Fill-up table below if water is not obtained from the local water utility)		m^3/day
Water **(Rainwater Collection System)**		m^3/day

Water Source

[ ] ground water [ ] well [ ] spring [ ] others: _____

[ ] Surface water [ ] river [ ] lake [ ] others: _____

Location of water source

_____

(Sitio/Zone, Barangay, Municipality/City, Province, Region)

Energy/Water Efficiency

Utilities	Estimated Savings	Proposed Efficiency/Conservation Measures
Power/Electricity	KWh	
Water	m^3/day	

1.4 **MANPOWER**

a. **Construction Phase**

Manpower Requirement	Expertise/Skills	Total

b. **Operation Phase**

Manpower Requirement	Expertise/Skills	Total

1.6 **INDICATIVE PROJECT COST**

Project Cost (PhP): _____

II. ENVIRONMENTAL IMPACTS AND MANAGEMENT PLAN

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
LAND				
☑ Consistency with land use	Current land use w/in 1km radius (as per zoning ordinance): ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others _____ Actual land uses w/in 1km radius: ☐ Residential ☐ Commercial/ Institutional ☐ Industrial ☐ Agricultural/ Recreational ☐ Protected Areas ☐ Others _____	☑ See attached proof of compatibility with land use		
☐ Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: ☐ Forestland ☐ Marshland ☐ Grassland ☐ Mangrove ☐ Wetland Others, specify _____	☑ Compliance with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit ☑ Limit land clearing as much as possible ☑ Provide temporary fencing to vegetation that will be retained ☑ Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting);	☑ Annual inspection of area replanted/ revegetated	☑ Cost integrated in the construction /operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
☐ Change in surface landform/ topography/ terrain/slope ☐ Soil Erosion	Slope: ☐ flat (0-3%) ☐ gently sloping to rolling (3-18%) ☐ steep (>18%) Is the project site located in an area identified by MGB/PAGASA/PHIVOLCS as hazard prone? ☐ Yes ☐ No	☐ Provide erosion control and slope protection measures ☐ Designate a Spoils Storage Area, with topsoil set aside for later use and allow maximum re-use of spoils ☐ Compliance to the standard criteria for sanitary landfill development DAO 49 and 50. ☐ Construction during dry season ☐ Stabilization of embankment with grasses or other soil cover ☐ Others, specify _____ ☐ Compliance with the DENR Administrative Order No. 96-37 and DENR Administrative Order No. 2000-28, Implementing Guidelines on Engineering Geological and Geo-hazard Assessment (EGGA).	☐ Regular inspection of slope protection measures in erosion-prone areas ☐ Regular inspection for new eroded areas near the site ☐ Others (Pls. specify): _____	☐ Slope/ Erosion Control Cost: _____ ☐ Others, specify _____ _____
☑ Soil/Land contamination due to improper solid waste disposal	Existing soil type in the area: ☐ sandy ☐ clay ☐ sandy-loam ☐ Others, specify _____	☑ Implementation of the Ecological Solid Waste Management Plan (ESWMP); ☐ Set-up temporary fence around the construction area ☑ Implement re-use and recycling of waste materials ☑ Implement proper segregation, collection and disposal of domestic wastes in designated areas ☑ Implement proper collection, labeling and storage of hazardous waste	☑ Daily inspection of waste/recycling bins for segregation ☑ Daily inspection for presence of mixed garbage in the facility ☑ Weekly inspection of waste accumulated ☐ Others, specify: _____	☑ Cost integrated in the construction /operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
		☑ Provide receptacles / bins for solid wastes ☑ Coordinate with the municipal / city waste collectors ☐ Engage third party company for waste collection ☐ Others, specify: _____		
☐ Impairment of visual aesthetics ☐ Devaluation of land values	Presence of visually significant landforms/landscape/structures? ☐ Yes ☐ No	☑ Implement landscaping and other beautification measures ☑ Provide adequate buffer ☐ Compensate adjacent property owners ☐ Others, specify: _____	☑ Regular inspection of landscaping and other beautification activities ☑ Regular monitoring of buffer zones ☑ Regularly monitor presence/absence of complaints from adjacent property owners	☑ Cost integrated in the construction/ operation cost
☐ Encroachment into protected areas or ecologically-sensitive areas	Is the project area near protected areas or ecologically-sensitive areas? ☐ Yes ☐ No	☑ Obtain appropriate permits/clearances from concerned agencies ☑ Provide adequate buffer ☐ Others, specify: _____	☑ Regular coordination with concerned agencies	☑ Cost integrated in the construction/ operation cost
WATER				
☐ Increased siltation due to project activities ☐ Water quality degradation ☐ Others, specify _____	Specify nearest/receiving water body: _____ Distance to nearest/receiving water body: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km	☑ Set-up proper and adequate sanitary facilities ☐ Strictly require the contractor and its workers to observe proper waste disposal and proper sanitation ☑ Strictly observe proper waste handling and disposal ☐ Provision of wastewater treatment facility	Regular (ocular) inspection of: ☐ Drainage / canal systems ☐ Water treatment facility (i.e., grease trap, septic tank, etc.) Monthly monitoring of the following: ☐ pH	☑ Cost integrated in the construction/ operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
	☐ More than 1 km If nearest/receiving water body is fresh water, specify classification: ☐ AA ☐ A ☐ B ☐ C ☐ D If nearest/receiving water body is coastal or marine water, specify classification: ☐ SA ☐ SB ☐ SC ☐ SD Current Water Use: ☐ Fishery ☐ Tourist Zone / Park ☐ Recreational ☐ Industrial ☐ Agricultural	(e.g. septic tank, oil and water separator, etc.) ☐ Set up silt trap/settling ponds to minimize downstream siltation ☐ Provide ring canals around fueling tanks/ motor pool/ maintenance areas ☐ Limit, where possible, the extent of impervious (paved) areas ☐ Installation of biogas digester/s system ☐ provision on at least 50 meters distance between the landfill and any perennial lake, stream or river ☐ Provision on the minimum standard for sanitary landfill liner system ☐ Installation of underdrain system ☐ Separation of at least two (2) meters between the top of the liner system and the underlying groundwater ☐ Others (Pls. specify): _____	☐ TSS concentration ☐ BOD ☐ Total Coliform ☐ Color ☐ Oil and Grease Monthly monitoring of the following: ☐ Trace Metals (Pb, Cd, Hg, CrS, As)	

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
☐ Increased occurrence of flooding	Is the project site located in an area identified by MGB/PAGASA as flood prone? ☐ Yes ☐ No	☐ Use appropriate design for project facilities ☐ Implement appropriate drainage system ☐ Regularly remove debris and other materials that may obstruct water flow ☐ Use appropriate technology (e.g. raised hand-pumps) to protect drinking water from flood contamination ☐ Others, specify: _____	☑ Regularly monitor presence/absence of complaints ☑ Regular coordination with concerned agencies ☑ Regularly monitor increased frequency of flooding ☐ Others, specify: _____	☑ Cost integrated in the construction/ operation cost
AIR/NOISE				
☐ Air quality degradation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all emission sources (e.g. vehicles, boiler, generator, etc) ☐ Install when applicable, the appropriate air pollution control device/s ☐ Install methane recovery facility ☐ Install biogas and composting facility ☐ Strictly enforce good housekeeping practices ☐ Control vehicle speed to lessen suspension of road dust ☐ Conduct water spraying to suppress dust sources and minimize discomfort to nearby residents ☐ Use covered vehicles to deliver materials that may generate dust ☐ Other, specify _____	☑ Regularly monitor presence/absence of complaints Regular (ocular) inspection of: ☐ Absence of white or black smoke from vehicles, heavy equipment, generator, etc. ☐ Presence of truck cover during deliveries Quarterly monitoring of ambient air for the following: ☐ TSP ☐ PM10 ☐ NOx ☐ SOx ☐ CO / CO_2	☑ Cost integrated in the construction/ operation cost

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Cost of Mitigation/ Monitoring
☐ Nuisance due to generation of obnoxious/unpleasant odor	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km Is the wind direction blowing towards the nearest community most of the year? ☐ Yes ☐ No	☐ Use of environment-friendly deodorizer or odor masking substances ☐ Spraying natural / microbial disinfectants ☐ Daily application of soil cover ☐ Provide adequate buffer and/or planting of trees ☐ Others (Pls. specify): _____	☑ Regularly monitor presence/absence of complaints	☑ Cost integrated in the construction/ operation cost
☐ Nuisance due to noise generation	Distance to nearest community: ☐ 0 to less than 0.5 km ☐ 0.5 to 1 km ☐ More than 1 km	☐ Properly operate and maintain all noise sources (e.g. vehicles, boiler, generator, etc) ☐ Install when applicable, the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) ☐ Implement appropriate operating hours ☐ Provide adequate buffer and/or planting of trees ☐ Others, specify ☐ _____	☑ Regularly monitor presence/absence of complaints ☐ Regular monitoring of buffer zones	☑ Cost integrated in the construction/ operation cost

☐ Displacement of Indigenous People s nor LM	☐ >1,000 and ≤ 5,000persons ☐ >5,000person host barangay: ☐ Schools (e.g. elementary, high ☐ Others, specify:	financial obligations ☑ Regular coordination with LGU ☐ Provide appropriate traffic/warning signs, lighting, etc	LGU ☐ Others, specify	

Impacts on community	☑ Regular coordination with LGU ☐ Others, specify	☑ Regularly monitor LGU	☑ Cost integrated in the

III. ABANDONMENT /DECOMMISSIONING/REHABILITATION POLICIES AND GENERIC GUIDELINES (If Applicable)

iv. inazrruriouAr r-rd roe EuP i¥ ruzuE++réan

Insert chart here:

Attach sketch plan/lay-out of the project

(Use additional sheet if necessary)

Attach site development/layout plan (with dimensions and descriptions)

SWORN STATEMENT OF ACCOUNTABILITY OF THE PROPONENT

Initial Environmental Examination (IEE) Checklist Report are accurate and complete to the best of

- Abide and conform with LGU development plans and guidelines

misrepresentation or failure to state material information in this IEE Checklist

E ZF P NE F ECO

APPENDIX 5
DENR Effluent Standards (DENR Administrative Order No. 1990-35)

TABLE 1 _ EFFLUENT STANDARDS: TOXIC AND OTHER DELETERIOUS SUBSTANCE
(Maximum Limits for the Protection of Public Health)

PARAMETER	UNIT	PROTECTED WATERS CATEGORY I (Class AA & SA)		PROTECTED WATERS CATEGORY II (Class A, B, & SB)		INLAND WATERS CLASS C		MARINE WATERS CLASS SC		MARINE WATERS CLASS SD	
		OEI	NPI	OEI	NPI	OEI	NPI	OEI	NPI	OEI	NPI
Arsenic	mg/L	(B)	(B)	0.2	0.1	0.5	0.2	1.0	0.5	1.0	0.5
Cadmium	mg/L	(B)	(B)	0.05	0.02	0.1	0.05	0.2	0.1	0.5	0.2
Chromium (hexavalent)	mg/L	(B)	(B)	0.1	0.05	0.2	0.1	0.5	0.2	1.0	0.5
Cyanide	mg/L	(B)	(B)	0.2	0.1	0.3	0.2	0.5	0.2	--	--
Lead	mg/L	(B)	(B)	0.2	0.1	0.5	0.3	1.0	0.5	--	--
Mercury	mg/L	(B)	(B)	0.005	0.005	0.005	0.005	0.005	0.005	0.05	0.01
PCB	mg/L	(B)	(B)	0.003	0.003	0.003	0.003	0.003	0.003	--	--
Formaldehyde	mg/L	(B)	(B)	2.0	1.0	0.2	1.0	2.0	1.0	--	--

TABLE 2A _ EFFLUENT STANDARDS: Conventional and Other Waters Class CA

	UNIT	(CLASS AA & SA) OEI		(CLASS A,B, & SB) OEI		INLAND CLASS C. OEI	
Colm	PCU	(B)	(B)	150		200(C)	150(D)
Texture oC rite		(B)	(B)	3	3	3	3
pH (range)		(B)	fB)	6Ik9£)	dA9.O	€.09.0	6¥@D
COD	mg/L						
Settleable Solids	mL/L	(B)	(B)	gJ	0J	0.5	0.5
Soils							
Total Dissolved	mg/L	(B)	(B)	1,200	1,000	1,500	1.000
	mg/L						
Oil/Grease	mg/L						
(Petroleum Ether Extract)	mg/L						
Total Coliforms	MPN/mL	(B)	(B)	5,000	3,000	15,000	10,000

TABLE 2B - EFFLUENT STANDARDS: Conventional and Other Pollutants in Inland Waters Class D,Coastal Waters Class SC and SD and Other Coastal Waters not yet Classified)

PARAMgf£R	UNIT	INLAND		COASTAL		CLASS SD & OTHER	
Color	PCU		---	(C)	(C)	(C)	(C)
Temperature	o€' rise	3	3	3	3	3	3
COD	mg/L	20	ZXt	250	2tXl	300	200
5-Day20›CBOD	mg/L	1S0tD)	t20	120@)	II I	1S0fD}	120
Toia4Susgast<d	mg/L	3tO	\30	2tXt	ISO	{0)	{P}
Teial DicveIvoJ Solids	mgfL	1000(H)	l,ne0tH)	---	---	---	
Surfactants (MBAS)		---	---			---	---
Oil/Grease (Petroleum	mg/L	---	---	15	10	15	15
Phenolic Substances	mg/L	---	-	i.0f0	O	VO	LO
	100mL	(J)	(J)	---	---	---	---

APPENDIX 6
Rapid Environmental Assessment (REA) Checklist for Water Supply

Rapid Environmental Assessment (REA) Checklist

Instructions:

(I) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(II) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(III) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area…			
• Densely populated? • Heavy with development activities? • Adjacent to or within any environmentally sensitive areas?			
⇒ Cultural heritage site			
⇒ Protected Area			
⇒ Wetland			
⇒ Mangrove			
⇒ Estuarine			
⇒ Buffer zone of protected area			
⇒ Special area for protecting biodiversity			
⇒ Bay **B. Potential Environmental Impacts** Will the Project cause… • pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			

Screening Questions	Yes	No	Remarks
• impairment of historical/cultural monuments/areas and loss/damage to these sites?			
• hazard of land subsidence caused by excessive ground water pumping? • social conflicts arising from displacement of communities ?			
• conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters? • unsatisfactory raw water supply (e.g. excessive pathogens or mineral constituents)?			
• delivery of unsafe water to distribution system? • inadequate protection of intake works or wells, leading to pollution of water supply?			
• over pumping of ground water, leading to salinization and ground subsidence? • excessive algal growth in storage reservoir? • increase in production of sewage beyond capabilities of community facilities? • inadequate disposal of sludge from water treatment plants? • inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities? • impairments associated with transmission lines and access roads?			
• health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals. • health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?			
• dislocation or involuntary resettlement of people? • disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
• noise and dust from construction activities? • increased road traffic due to interference of construction activities?			
• continuing soil erosion/silt runoff from construction operations?			

Screening Questions	Yes	No	Remarks
• delivery of unsafe water due to poor O&M treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
• delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals? • accidental leakage of chlorine gas?			
• excessive abstraction of water affecting downstream water users? • competing uses of water?			
• Increased sewage flow due to increased water supply • Increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
• large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? • social conflicts if workers from other regions or countries are hired? • risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
• community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.	Yes	No	Remarks
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Appendix I)? • Could changes in temperature, precipitation, or extreme events patterns over the Project lifespan affect technical or financial sustainability (e.g., changes in rainfall patterns disrupt reliability of water supply; sea level rise creates salinity intrusion into proposed water supply source)?			
• Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)? • Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., by using water from a vulnerable source that is relied upon by many user groups, or encouraging settlement in earthquake zones)?			

* Hazards are potentially damaging physical events.

APPENDIX 7
Rapid Environmental Assessment (REA) Checklist for Sewage Treatment

Rapid Environmental Assessment (REA) Checklist

Instructions:

(I) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(II) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(III) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	
Sector Division:	

Screening Questions	Yes	No	Remarks
B. Project Siting Is the project area… • Densely populated?			
• Heavy with development activities? • Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine • Buffer zone of protected area • Special area for protecting biodiversity • Bay **A. Potential Environmental Impacts** Will the Project cause…			
• Impairment of historical/cultural monuments/areas and loss/damage to these sites?			

Screening Questions	Yes	No	Remarks
• interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.? • dislocation or involuntary resettlement of people?			
• disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups? • impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
• overflows and flooding of neighboring properties with raw sewage? • environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			
• noise and vibration due to blasting and other civil works? • risks and vulnerabilities related to occupational health and safety due to physical, chemical,and biological hazards during project construction and operation? • discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
• inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities? • road blocking and temporary flooding due to land excavation during the rainy season?			
• noise and dust from construction activities? • traffic disturbances due to construction material transport and wastes?			
• temporary silt runoff due to construction? • hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
• deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water? • contamination of surface and ground waters due to sludge disposal on land?			

Screening Questions	Yes	No	Remarks
• health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
• large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)? • social conflicts between construction workers from other areas and community workers? • risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
• community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Climate Change and Disaster Risk Questions The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.	Yes	No	Remarks
• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes (see Appendix I)? • Could changes in precipitation, temperature, salinity, or extreme events over the Project lifespan affect its sustainability or cost? • Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g. high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?			
• Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., increasing traffic or housing in areas that will be more prone to flooding, by encouraging settlement in earthquake zones)?			

APPENDIX 8
Outline of an Environmental Impact Assessment Report (ADB SPS – 2009)

OUTLINE OF AN ENVIRONMENTAL IMPACT ASSESSMENT REPORT

This outline is part of the Safeguard Requirements 1. An environmental assessment report is required for all environment category A and B projects. Its level of detail and comprehensiveness is commensurate with the significance of potential environmental impacts and risks. A typical EIA report contains the following major elements, and an IEE may have a narrower scope depending on the nature of the project. The substantive aspects of this outline will guide the preparation of environmental impact assessment reports, although not necessarily in the order shown.

A. Executive Summary

This section describes concisely the critical facts, significant findings, and recommended actions.

B. Policy, Legal, and Administrative Framework

This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

C. Description of the Project

This section describes the proposed project; its major components; and its geographic, ecological, social, and temporal context, including any associated facility required by and for the project (for example, access roads, power plants, water supply, quarries and borrow pits, and spoil disposal). It normally includes drawings and maps showing the project's layout and components, the project site, and the project's area of influence.

D. Description of the Environment (Baseline Data)

This section describes relevant physical, biological, and socioeconomic conditions within the study area. It also looks at current and proposed development activities within the project's area of influence, including those not directly connected to the project. It indicates the accuracy, reliability, and sources of the data.

E. Anticipated Environmental Impacts and Mitigation Measures

This section predicts and assesses the project's likely positive and negative direct and indirect impacts to physical, biological, socioeconomic (including occupational health and safety, community health and safety, vulnerable groups and gender issues, and impacts on livelihoods through environmental media [Appendix 2, para. 6]), and physical cultural resources in the project's area of influence, in quantitative terms to the extent possible; identifies mitigation measures and any residual negative impacts that cannot be mitigated; explores opportunities for enhancement; identifies and estimates the extent and quality of available data, key data gaps, and uncertainties associated with predictions and specifies topics that do not require further attention; and examines global, transboundary, and cumulative impacts as appropriate.

F. Analysis of Alternatives

This section examines alternatives to the proposed project site, technology, design, and operation—including the no project alternative—in terms of their potential environmental

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J. Conclusion and Recommendation

This section provides the conclusions drawn from the assessment and provides

APPENDIX 9
SAMPLE GRIEVANCE REDRESS FORM

The _____Project welcomes complaints, suggestions, queries, and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing "(CONFIDENTIAL)" above your name. Thank you.

Date		**Place of Registration**			
Contact Information/Personal Details					
Name		**Gender**	* Male * Female	**Age**	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Letter E-mail Verbal/Telephonic	
Reviewed by: (Names/Positions of Officials Reviewing Grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

ANNEX 2

Gender Action Plan

GENDER ACTION PLAN

1. **Gender Classification**. The purpose of the Project is to target less resilient water districts (WDs) in cities and municipalities outside Metro Manila including the WDs in San Fernando (La Union) and the City of Koronadal, to fund the extension and rehabilitation of their water supply (e.g., the construction of new deep wells, transmission and distribution pipelines) and sanitation projects, as well as capacity building development and institutional strengthening for the executing agency, Local Water Utilities Administration (LWUA) and WDs. Women will benefit from the Project through affordable tariffs and other pro-poor initiatives, capacity building and representation on WD Boards. The project is classified as effective gender mainstreaming (EGM) in design.

2. **Gender Action Plan (GAP) Purpose and Strategy**. The 2009 socio-economic survey shows that a small portion of households in the target WDs have piped water connections and sanitation facilities (11-18%). Among the poor in these cities, 90% of them don't have water connections despite LWUA's socialized tariff policy. The significant social and economic burden of illness, health care for the family, child care, water fetching, food preparation and other associated domestic responsibilities associated with not having water and sanitation connections, falls primarily on women. Women are positioned to benefit from the project's interventions due to their central role in water, hygiene and sanitation management. At the community level, women's participation in water system operations is low as there are no formal water associations in the pilot service areas in which theycould participate in the operation and maintenance of water and sanitation facilities. The Government's existing framework for gender action is not being maximized by LWUA and the pilot WDs.[1] LWUA and the pilot WDs have designated gender focal points and gender and development (GAD) programs. However, their GAD budgets have not been fully utilized, with limited gender-specific activities such as capacity-building for increased women's participation in technical operational roles. The Project's gender strategy will facilitate women's participation and benefits through GAP implementation (see Table below). These include enhanced hygiene and sanitation awareness and training, connections to proper water supply and sanitation, capacity building, and representation on WD Boards. Pro-poor measures include lifeline tariffs and initiatives for affordable access (e.g. socialized and/or installment schemes for connection fees).

3. **Implementation and Monitoring Arrangements**. The Borrower shall ensure that it complies with all relevant laws and regulations related to gender actions.[2] A responsibility center will be created at LWUA/project management unit (PMU), with the designation of an employee to monitor GAP implementation by LWUA and participating WDs (including preparing 6-monthly progress reports and ensuring that the bidding documents and contracts include relevant provisions for contractors to comply with the measures set forth in the GAP) and to provide implementation support to the conduct of GAP activities, such as training and capacity-building on required competencies of the project implementation units (PIUs) in compliance with those aspects of the GAP applicable to the WD. Similarly, each WD will be set up a responsibility center and a gender focal person responsible for preparing and implementing a gender action plan for the WD in order to ensure the WD's compliance with those aspects of the GAP

[1] Including Republic Act No. 7192 ("Women in Development and Nation-Building Act" passed on February 12, 1992), Executive Order No. 273 ("Approving and Adopting the Philippine Plan for Gender-Responsive Development, 1995 to 2025" passed on September 8, 1995), and Joint Circular No. 2004-1 issued by the Department of Budget and Management (DBM), the National Economic and Development Authority (NEDA) and the National Commission on the Role of Filipino Women which prescribes guidelines and procedures for the formulation and submission of agency annual GAD plans and budgets, and GAD accomplishment reports.

[2] See footnote 1.

applicable to the WD, including the preparation of budgets for, and the implementation, updating and monitoring of, the WD's gender action plan. Other staff members of the WD will be engaged to assist with various activities in the WD's gender action plan.

4. **GAP Budget**. LWUA will allocate a yearly budget for the implementation of the GAP, which will be taken from its GAD budget. In addition to enhancing its own GAD capacity, LWUA will work with participating WDs to ensure that compliance with those aspects of the GAP applicable to them.

Table 11.1 GAP Budget (pesos)

Budget Item	Year 1	Annual Budget Years 2 to 6
Training of LWUA's and WDs' gender focal points on GAP implementation and monitoring	400,000	200,000
Capacity building of LWUA and WDs staff on gender analysis, gender-responsive planning and budgeting	600,000	300,000
Supervision and monitoring of GAP implementation – database creation and maintenance	200,000	200,000
Total	1,200,000	700,000

GAP = Gender Action Plan, LWUA = Local Water Utilities Administration, WD = water district

Table 11.2 Summary of Gender Action Plan

Project Output	Proposed Actions and Targets
Client-Focused	
Output 1: Expansion and improvement of water supply systems; sanitation projects	➢ Information dissemination on new water services targeting poor households in the existing and expansion water service areas. ➢ Promoting affordability to low-income households including ensuring the minimum charge for monthly water consumption should meet LWUA's guidelines for low-income households in the areas served by participating water districts (WDs). ➢ Partnership with barangay health workers/units and non-government organizations (NGOs) for delivery of sanitation information education and communication (IEC) and training. Per subproject, IEC training for 100 barangay health workers, science, public school teachers (50% are female). ➢ Ensuring WDs consult with women and men separately about content, format, and media for IEC messages.
Organization-Focused	
Output 2: Capacity and institutional development for participating WDs and LWUA.	➢ Training to enhance sustainability of operations for WDs (business planning, project implementation, management information system [MIS], non-revenue water [NRW] reduction) (at least 30% of participants are female).[3] ➢ Designation of an employee to coordinate, monitor and report on implementation of GAP activities. ➢ Capacity development of LWUA/WDs in gender analysis, gender-responsive planning, gender budgeting, and GAP compliance. ➢ At least 30% of LWUA's overall staff and management at project management unit are female. [4] ➢ Encouraging the appointment of at least 2 women on the Board of each participating WD, of which one is a representative of a women's organization (e.g. a relevant NGO or national women's group). ➢ Allocation from LWUA's yearly GAD budget to its GAP budget to support project implementation. ➢ Detailed project performance monitoring (including compliance with GAP), reporting, accounting, and auditing systems developed, with collection of sex-disaggregated data, provide 6-monthly reports and feed data into mid-term review and Project Completion Report.

[3]Baselines will be collected for LWUA and each participating WD. If the baseline indicates a higher % of female representation than the 30% target, an appropriate higher target will be incorporated and reported to ADB.

[4]See footnote 3.

ANNEX 3

Resettlement Framework and Indigenous Peoples Planning Framework

Resettlement Framework

March 2014

Philippines: Water District Development Sector Project

Prepared by Local Water and Utilities Administration for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 19 March 2014)

Currency unit	–	peso (Php)
Php1.00	=	$0.0224074572
$1.00	=	Php 44.63

ABBREVIATIONS

ADB	–	Asian Development Bank
AH	–	affected household
AP	–	affected person
CKWD	–	City of Koronadal Water District
DA	–	Department of Agriculture
DMS	–	detailed measurement survey
EA	–	executing agency
EMA	–	external monitoring agency
GAD	–	gender and development
GAP	–	gender action plan
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
HH	–	Household
IA	–	Implementing Agency
IOL	–	Inventory of losses
IP	–	Indigenous Peoples Plan
LGU	–	Local Government Unit
LWUA	–	Local Water and Utilities Administration
m3	–	cubic meter
MDG	–	millennium development goal
MSFWD	–	Metro San Fernando (La Union) Water District
NEDA	–	National Economic and Development Authority
NRW	–	non-revenue water
PCUP	–	Presidential Commission on the Urban Poor
PIB	–	public information booklet
PIU	–	project implementation unit
PMU	–	project management unit
PPTA	–	project preparatory technical assistance
OCR	–	ordinary capital resources
RF	–	Resettlement Framework
ROW	–	right-of-way
RP	–	Resettlement Plan
SAR	–	Subproject Appraisal Report
SES	–	Socio-economic Survey
SPS	–	ADB's Safeguard Policy Statement (2009)
UFPF	–	Urban Financing Partnership Facility
WACC	–	weighted average cost of capital
WD	–	Water District
WDDSP	–	Water District Development Sector Project
WDRC	–	Water District Resettlement Committee

GLOSSARY

Affected People (APs) – includes any person, entity or organization affected by the Project, who, on account of the involuntary acquisition of assets in support of the implementation of the Project, would have their (i) standard of living adversely affected; (ii) right, title or interest in all or any part of a house and buildings, pavements and other physical improvements, land (including residential, commercial, agricultural, plantations, forest and grazing land), water resources, annual or perennial crops and trees, or any other moveable or fixed assets acquired or possessed, in full or in part, permanently or temporarily; and (iii) business, profession, work or source of income and livelihood lost, partly or totally, permanently or temporarily

Compensation – the payment in cash or in kind at replacement cost for an asset affected or to be acquired by the Project.

Eligibility cut-off date – the date that a population record or census, preferably at the project preparation stage, has been conducted and is determined to be the basis for qualifying persons who are eligible to receive entitlements under a Resettlement Plan (RP). The purpose of setting a cut-off date is to prevent a subsequent influx of encroachers or others who wish to take advantage of such benefits. The cut-off date will be the date of the start of the census for the RP.

Entitlement – refers to a range of measures comprising compensation in cash and/or in kind for loss of land and non-land assets, including assistance for income restoration and relocation and special support to poor and vulnerable households.

Land Acquisition – is the process whereby a person is compelled by the Government through the Executing Agency/Implementing Agency of the Project to alienate all or part of the land s/he owns or possesses in favor of the Government in the implementation of the Project or any of its components in return for compensation.

Relocation – the physical shifting of an AP from his/her pre-project place of residence and/or business to another place.

Replacement Cost – the amount in cash or in kind needed to replace an asset and is the value determined as compensation for:

a. Agricultural land based on market prices that reflect recent land sales prior to the commencement of the subroject or displacement, and in the absence of such recent sales, based on assessed and prevailing market value;

b. Residential land based on market prices that reflect recent land sales prior to the commencement of the subroject or displacement, and in the absence of such recent land sales, based on similar location attributes;

c. Houses and other related structures based on prevailing market prices of materials and labor, without depreciation nor deductions for salvaged building materials;

d. Crops based on prevailing market value;

e. Trees and other perennials based on prevailing market value; and

f. Other assets (i.e., income, community facilities) based on

replacement cost or the cost of mitigating measures.

Rehabilitation – means assistance provided to severely affected APs due to the loss of 10% or more of productive assets (i.e., farmland, crops and trees, vegetable garden, etc.), incomes, and employment, or when sources of living such as shops and places of employment have to be reconstructed completely and/or relocated. The livelihood support may be given in cash or in kind or a combination of the two in order to improve or at least achieve full restoration of living standards to pre-project levels.

Resettlement – is considered significant where 200 or more people experience major impacts. Major impacts are defined as involving APs being: (i) physically displaced from housing, place of residence and sources of income, and/or (ii) losing 10% or more of their productive, income-generating assets. APs experiencing major impacts are referred to as "severely affected APs".

Structures and structural losses – refer to losses to constructed assets, residential houses, pavements, driveways, institutional structures, utility structures, business structures with residences attached to it and other income- producing spaces

Severely Affected Persons – are those who experience major impacts due to: (i) being physically displaced from their housing, place of residence and sources of income, and/or (ii) loss of 10% or more of their productive, income-generating assets.

Vulnerable Groups – are distinct groups of people who might suffer disproportionately or face the risk of being further marginalized by the effects of resettlement and specifically include: (i) households headed by women, the elderly or disabled, (ii) households living below the poverty threshold, (iii) the landless, and (iv) indigenous people and ethnic minorities.

NOTE

In this report, "$" refers to US dollars.

INTRODUCTION

A. Project Background

1. The Project will fund the expansion and rehabilitation of water supply systems, and pilot sanitation projects of water districts (WDs) outside Metro Manila, in order to reduce the occurrence of water-related diseases. The total Project Cost is $76 million. The Government has requested ADB to provide a $60 million sector loan for WDs. The Urban Environmental Infrastructure Fund Grant under the Urban Financing Partnership Facility (UEIF-UFPF) will provide a $2 million grant to subsidize pilot sanitation facilities. Funds are expected to be channeled to WDs through the Local Water Utilities Administration (LWUA).[1]

2. Rapid urbanization and inadequate water supply and sanitation investments have stretched to the limit the capacity of services and facilities in many urban areas outside Metro Manila, and increased water resources pollution. Less than 50% of urban households are estimated to have piped water, with most served by WDs. Various studies report that WDs provide better water service compared to local government unit (LGU)-run water utilities, and attribute this to corporatization (i.e., WDs do not receive subsidies from LGUs) and to access to financing, training and technical assistance from LWUA.

3. Supporting WDs will help the Government achieve its millennium development goals (MDGs) for safe water and improved sanitation. The Project will provide to WDs much-needed funds to rehabilitate and expand water facilities, strengthen institutional capacities, and enhance sustainability. According to LWUA, 511 WDs were operational at year-end 2012. Most WD operations are plagued with low profitability, high nonrevenue water (NRW) levels, and weak institutional and limited technical capacity; over half are relatively small (with <3,000 service connections). The Project will target WDs who rely primarily on LWUA for technical support and financing; these WDs are likely to be in less developed provinces, cities and municipalities. The Project will also raise awareness about sanitation and seek to fund pilot sanitation facilities.

4. A project preparatory technical assistance (PPTA) prepared feasibility studies and safeguard documentation for the subprojects of two pilot WDs, City of Koronadal WD (CKWD) and Metro San Fernando WD (MSFWD), which have affirmed their interest in participating in the Project.[2] LWUA confirmed strong interest from other WDs for the remaining available funding under the Project.

B. Scope of the Resettlement Framework

5. This Resettlement Framework (RF) presents the general guidelines and procedures for preparing Resettlement Plans (RPs) for subprojects under the Project. The LGUs in the City of Koronadal confirmed that public land will be made available for CKWD's water supply and

[1] In 1973, to address grossly inadequate water supply and sanitation infrastructure outside Metro Manila, the Provincial Water Utilities Act (Presidential Decree 198) was passed to (i) encourage local government units (LGUs) to form water districts (WDs), corporatized entities to supply water within a franchise area, without subsidies from LGUs, and (ii) establish LWUA, a government-owned specialized lender/tariff regulator/institutional development advisor for WDs.

[2] A $1.5 million PPTA (including $0.3 million from the Government) was approved in 2007. Five pilot WDs were selected based on criteria established in 2008 by the Project stakeholders (e.g., "creditworthiness" as defined by LWUA, interest to participate, and readiness), the PPTA prepared feasibility studies and the final PPTA report submitted in May 2010. Processing of the loan was put on hold until the appointment of a new management at LWUA. In January 2012, the Government renewed its interest in finalizing the Project and ADB reengaged the PPTA consultants. Of the original five pilot WDs, CKWD and MSFWD are the remaining pilot WDs.

sanitation subprojects. An RP was prepared under the PPTA for MSFWD's subproject (water supply) where land acquisition is expected. The RP follows a process consistent with ADB's **Safeguard Policy Statement 2009** (SPS),[3] and Philippine laws on land acquisition and compensation. RPs of additional subprojects under the Project, if required during implementation, will be formulated using this RF and will be reviewed and endorsed by the executing agency (EA), prior to submission for ADB's approval.

A. LEGAL FRAMEWORK

A. Philippine Laws and Policies

6. The Philippine Constitution states that the protection of property is State Policy and is essential for Filipinos to enjoy the benefits of democracy. Private property is the right of every citizen. The Constitution also states that it prohibits depriving any person of his property without due process and no taking of property is allowed by law without just compensation. Existing legislation and guidelines that address various aspects of land acquisition and resettlement include among others Executive Order 1035, Republic Act (RA) 6657, RA 7160, RA 7279, RA 8435, and RA 8974. **Table 16.1** describes the laws and statutes applicable to aspects of resettlement.

Table 16.1: Laws and Statutes Governing Resettlement in the Philippines Applicable to WDDSP

Aspects of Resettlement	Laws and/or Statutes	Description
Community Participation and Consultation	R.A. No. 7160 (Local Government Code), Sections 2 (c) and 27.	Provide prior consultation with affected communities on any project and require the approval of the concerned Sangguniang Panglunsod (municipal council)
	R.A. No. 7279 (UDHA Law), Article I, Sec. 2; Article V, Sec. 23; Article VII, Sec. 28 (2) and IRR of UDHA, Sec. 3 (e.1)	The provisions of this law also require consultations with affected persons and communities. The results of consultations will form part of the approval of the RP by the local government units (LGU's) Sangguniang Panglunsod (SP); Sangguniang Bayan (SB)
	RA No. 8435 (Agriculture and Fisheries Modernization Act of 1997)	Consultation and participation of farmers, fisher folks and agrarian reform communities (ARCs) and other stakeholders
Land Acquisition	R.A. No. 7160 (Local Government Code), Section 19.	Provision for the LGUs or sub-national administrative entities in the exercise of the power of eminent domain but it can only be applied for "public use or purpose or for the benefit of the poor and the landless" and property owners will be paid just compensation.
	EO 1035 R.A. No. 8974 (Guidelines for Government Acquisition of Right of Way or Site Location)	Facilitating the Acquisition of Right-of-Way (ROW), Site or Location of National Government Infrastructure Projects and for Other Purposes.
	R.A. No. 7279 (Urban Development and Housing Act of 1992)	Provision for the development, award and disposal of land under usufruct arrangement for purpose and use of socialized housing and urban services.

[3] http://www.adb.org/sites/default/files/pub/2009/Safeguard-Policy-Statement-June2009.pdf

Aspects of Resettlement	Laws and/or Statutes	Description
	Comprehensive Agrarian Reform Law Republic Act 6657 (1988) Republic Act 6389	RA 6657 Section 28 states that landowner shall retain his share of any standing crop un-harvested at the time the Department of Agrarian Reform (DAR) shall take possession of the land under Section 16 of this Act, and shall be given a reasonable time to harvest RA 6389 states that “in the event of change in land use from agriculture to other uses, agricultural lessees are entitled to disturbance compensation equivalent to five times the average of the gross harvests on his landholding during the last five preceding calendar years."
Compensation	R.A. No. 8974, Sections 8, 9, 10 and 13.	Provides for the compensation of affected properties based on prevailing market prices. RA 8974 - An Act to Facilitate the Acquisition of ROW Site or Location for National Government Infrastructure Projects. The Implementing Rules and Regulations (IRR) of this law stipulates that the Implementing Agency shall negotiate with the owner for the purchase of the property by offering first the current zonal value issued by the Bureau of Internal Revenue (BIR) for the area where the private property is located. Further, that valuation of improvements and/or structures on land to be acquired shall be based on the replacement cost, defined as the amount necessary to replace the structure or improvement based on the current market prices for materials, equipment, labor, contractor’s profit and overhead, and all other attendant costs associated with the acquisition and installation in place of the affected improvements/installation.)
Poor/Informal Settler	R.A. No. 7279 (UDHA Law), Article V, Sections 21 and 22. Implementing Rules and Regulations of UDHA, Section 3, III (b.3.0) EO 1035 Sec.17 and 18	For urban poor, provision for basic services and livelihood component under socialized housing and urban services. They are not to be evicted nor their dwellings demolished except in accordance with the law in a just and humane manner (Constitution). Assistance is limited to payment at replacement cost for structures and improvements. Additional assistance may be provided on a case by case basis. Relocation/resettlement of tenants /occupants affected by Property /ROW Acquisitions. Financial assistance to be given to tenants/farmers equivalent to the value of the gross harvest for one year on the principal and secondary crops of the area acquired, based on the average annual gross harvest of the last three preceding crop years and in no case, financial assistance be less than Php15,000 per hectare.
Gender equality /Women in development	RA 7192 Sec. 5	Promotes the integration of women as full and equal partners of men in development and nation building. All government departments will ensure women benefit equally and participate directly in the development programs and projects specifically those funded under foreign development assistance, to ensure their full participation and involvement in the development process; to provide income and employment opportunities to women and asses extent to which such programs helped in enhancing their self reliance. Women of legal age has the capacity to enter into contract; has the capacity to borrow and obtain loans and execute security and credit arrangements under the same conditions as men/act as incorporators and enter into insurance contracts and secure travel

Aspects of Resettlement	Laws and/or Statutes	Description
		visas without the consent of their spouses, among others.
Monitoring	Executive Order No. 152 (Series of 2002)	Prescribes the broad monitoring of all types of eviction and demolitions involving the underprivileged and homeless citizens by the PCUP. All national government agencies and local government units should apply for Certificate of Compliance prior to the implementation of eviction and demolition.
Disclosure	Constitution RA 7279	States "full public disclosure by the State of all its transactions involving the public interest" and "the Citizens have the right of access to information on matters of public concern." Requires that all households affected are informed of any proposed development plan.

B. ADB Policies

7. Consistent with ADB's **Safeguard Policy Statement** 2009 (SPS)[4], the aim of ADB's **Policy on Involuntary Resettlement** is to avoid involuntary resettlement wherever possible and to minimize involuntary resettlement by exploring project and design alternatives. It also aims to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels, and to improve the standards of living of the displaced poor and other vulnerable groups.

8. The specific objectives and principles of ADB's Policy on Involuntary Resettlement are as follows:

a. Screen the project early to identify past, present and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.

b. Carry out meaningful consultations with affected persons, host communities and concerned non-government organizations. Inform all displaced persons of their entitlements and resettlement options. Insure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and indigenous peoples, and those without legal title to land and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.

c. Improve, or at least restore, the livelihoods of all displaced persons through (i) land- based resettlement strategies when affected livelihoods are land-based where possible, or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot

[4] http://www.adb.org/sites/default/files/pub/2009/Safeguard-Policy-Statement-June2009.pdf

be restored, and (iv) additional revenues and services through benefit-sharing schemes where possible.

d. Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and productive opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.

e. Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal affordable access to adequate housing.

f. Develop procedures in a transparent, consistent and equitable manner if land acquisition is through negotiated settlement, to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.

g. Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.

h. Prepare the RP elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget and time-bound implementation schedule.

i. Disclose a draft RP, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders.

j. Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of the project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.

k. Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the RP under close supervision throughout project implementation.

l. Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the RP have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring results.

9. The SPS also provides more specific policies to be observed by the borrower/client with regard compensation to displaced persons. These are:

a. The absence of legal title to land is not a barrier to compensation and rehabilitation of affected people. All people adversely affected by the Project are entitled to the assistance to restore pre-project conditions through compensation, resettlement and livelihood restoration. The poorest and vulnerable affected people, including households headed by women, the elderly, disabled, ethnic minorities, and the landless, must be assisted to improve their socio-economic conditions.

b. The rate of compensation for acquired housing, land and other assets will be calculated at full replacement cost. The calculation of full replacement cost will be based on the following elements: (i) fair market value; (ii) transaction costs; (iii) accrued interest; (iv) transitional and restoration costs; and (v) other applicable payments, if any. In the calculation, depreciation of structures will not be taken into account. It is expected that qualified and experienced experts will undertake the valuation of acquired assets.

c. In the case of economically displaced persons, regardless of whether or not they are physically displaced, the borrower/client will promptly compensate for the loss of income or livelihood sources at full replacement cost. The borrower/client will compensate economically displaced persons for lost assets such as land, crops, irrigation infrastructure, and other improvements made to the land[5] at full replacement cost. In cases where land acquisition affects commercial structures, affected business owners are entitled to (i) the cost of reestablishing commercial activities elsewhere; (ii) the net income lost during the transition period; and (iii) the costs of transferring and reinstalling plant, machinery and other equipment. Business owners with legal rights or recognized or recognizable claims to land where they carry out commercial activities are entitled to replacement property of equal or greater value or cash compensation at full replacement cost.

d. The borrower/client will ensure that no physical displacement or economic displacement will occur until (i) compensation at full replacement cost has been paid to each displaced person, (ii) other entitlements listed in the RP have been provided to displaced persons, and (iii) a comprehensive income and livelihood rehabilitation program, supported by an adequate budget, is in place to help displaced persons improve, or at least restore, their incomes and livelihoods.

10. ADB's **Policy on Indigenous Peoples** defines "indigenous peoples" in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; (iii) customary cultural, economic, social or political institutions that are separate from those of the dominant society and culture; and (iv) a distinct language, often different from the official language of the country or region. In considering these characteristics, national legislation, customary law, and any international conventions to which the country is a party will be taken into account. A group that has lost collective attachment to geographically distinct habitats or ancestral territories in the project area because of forced severance remains eligible for coverage under this policy.

11. ADB's **Policy on Indigenous Peoples** is "designed to promote the participation of indigenous peoples in project preparation and implementation, to ensure that they benefit from

[5] In the case of affected persons without legal title to land, the AP will be compensated at full replacement cost for affected non-land assets.

development interventions that would affect them, and to provide effective safeguards against any adverse impacts". In any ADB interventions, the approaches to be used are as follows: (i) to achieve the greatest possible reduction of poverty among the affected indigenous peoples; (ii) when negative impacts are unavoidable, they should be minimized as much as possible, and appropriate measures will be taken to mitigate the adverse impacts; (iii) in enhancing the benefits of a development intervention for indigenous peoples or reducing negative impacts of a development intervention, clear mechanisms for accurate and objective analysis of their circumstances will be prepared; and (iv) the mechanisms for any intervention must be transparent and should ensure accountability.

12. ADB's **Policy on Gender and Development** adopts gender mainstreaming as a key strategy for promoting gender equity, and for ensuring that women participate and that their needs are explicitly addressed in the decision-making process. For projects that have the potential to have substantial gender impacts, a gender action plan is prepared to identify strategies to address gender concerns and the involvement of women in the design, implementation and monitoring of the project.

13. The SR2 of SPS adopts a holistic approach in development as it mandates the incorporation of its other cross-cutting policy themes, such as the following:

(i) **Gender and Development (1998)**. It adopts gender mainstreaming as a key strategy for promoting gender equity, and for ensuring that women participate and that their needs are explicitly addressed in the decision-making process for development activities;

(ii) **Public Communications Policy (2011).** It seeks the active participation of affected people and other stakeholders during the development and review of safeguard policies on ADB-assisted programs and projects, consistent with ADB's OM Section F1/OP (March 2010); and

(iii) **Accountability Mechanism Policy (2012).** It is part of ADB's continued efforts to enhance its capacity in responding to and/or resolving the problems associated with the implementation of its policies in all programs or projects it assists. It consists of a consultation phase and a compliance review phase, by which the problems or issues raised by the affected people and/or stakeholders are investigated and resolved.

C. Gap Analysis and Reconciliation of Laws and Policies

14. In the design of compensation and entitlements of affected persons or households, consideration was given to the resettlement policies of the Philippine Government and that of ADB. The policies are shown in **Table 16.2** citing comparison, applicability and reconciliation in order to address the gaps in this Project.

Table 16.2: Comparison and Reconciliation of Applicable Philippine Laws, ADB's Safeguard Policy Statement 2009 and WDDSP Project Policy

Key Issues	Philippine Laws/ Policies	ADB Policy	WDDSP Project Policy
1. Non-titled land users, caretakers/tenants of land, sub-leased space not covered by contracts between and among the owners of land, and informal settlers of private government property, including community facilities.	**Philippine Constitution,** Article XIII, Section 10: Urban or rural poor dwellers shall not be evicted nor their dwellings demolished, except in accordance with the law and in a just humane manner. Focus is on urban poor as per UDHA. Limited assistance or protection is given to rural poor unless they are tenured agricultural underclass. The law is not very clear on assistance to small enterprises, renters.	Non-titled affected persons (APs) are not entitled to compensation of land but APs including renters, informal settlers/squatters are entitled to payment for non-land assets and assistance to restore their pre-project living conditions. If they are poor and vulnerable, appropriate assistance must be provided to help them improve their socio-economic status.	Non-titled APs are not entitled to compensation of land but APs including renters, informal settlers/squatters are entitled to payment for non-land assets and assistance to restore their pre-project living conditions. If they are poor and vulnerable, appropriate assistance must be provided to help them improve their socio-economic status. If government infrastructure is affected, owners are consulted and compensation and replacement will be provided.
2. Compensation for land, commercial structures, residential and income-generating spaces with attached mixed-use structures, crops and trees.	**Republic Act (RA) No. 8974**, Sections 8, 9, 10 and 13 provides compensation of affected properties based on fair market value. **Executive Order (EO) 1035** (1985) provides for the procedures and guidelines for the expeditious acquisition of properties and rights by the Philippine Government for infrastructure and other government projects.	All compensation will be based on the principle of replacement cost.	All compensation will be based on the principle of replacement cost.
3. Provision of rehabilitation assistance to displaced households and vulnerable groups	Income restoration/ rehabilitation assistance is available only to resettled families and beneficiaries of socialized housing.	All eligible APs including tenants, employees of affected businesses who stand to lose their jobs, incomes or livelihoods because of project	Rehabilitation assistance will be provided to those who lose 10% or more of their income generating assets and/or are physically displaced.

Key Issues	Philippine Laws/ Policies	ADB Policy	WDDSP Project Policy
	The Philippines has laws protecting women, elderly and children, persons with disabilities, and indigenous peoples. However, the issue is proper implementation and attention given to these groups based on resettlement impacts.	impacts are entitled to receive one-time financial assistance to cover losses of the move, as well as economic and social rehabilitation. Measures to address the status of the poor and vulnerable should focus on strategies to avoid their future impoverishment and create new opportunities for them.	Strategies to create new opportunities to improve incomes of poor and vulnerable people to avoid further impoverishment will be developed. The project will provide additional assistance on a case to case basis depending on the type of vulnerability identified. This assistance will be included in each RP.

III. PROJECT PRINCIPLES

15. The Project's Resettlement Framework (RF) and entitlements have been built upon the laws of the Government of Philippines, principally the Philippine Constitution that provides basic principles of water resources development and management, which stipulate that all waters of the Philippines belong to the state and applicable laws and regulations covering land acquisition, resettlement and compensation of land and structures, and the SPS. Whenever a gap exists, ADB's Policy on Involuntary Resettlement will prevail. The basic project principles of the RF are as follows:

(i) The acquisition of land and other assets and the relocation of APs will be minimized as much as possible by exploring all viable options.

(ii) All compensation will be based on the principle of replacement cost.

(iii) Rehabilitation assistance will be provided to severely affected people and other vulnerable groups to assist them to improve or at least restore their pre-project living standards, incomes and productive capacity.

(iv) Particular attention will be paid to the needs of the poorest people and vulnerable groups that may be at high risk of impoverishment. This may include those without legal title to land or other assets, landless households, households headed by females, the elderly or disabled and other vulnerable groups. Appropriate assistance must be provided to help them improve their socio-economic status.

(v) Lack of legal title to affected assets is not a bar to compensation and assistance.

(vi) In case of the relocation of APs, replacement houses and/or agricultural land will be located as close as possible to the assets that were lost, and at locations acceptable to the APs.

(vii) Efforts shall be made to maintain, to the extent possible, the existing social and cultural institutions of the resettled people and host communities.

(viii) APs will be fully informed and closely consulted and will participate in the preparation and implementation of the RP for each subproject. The comments and suggestions of APs and communities will be taken into account during the design and implementation phases of resettlement activities.

(ix) Adequate resources will be identified and committed during resettlement planning for each subproject and the overall Project. This includes adequate budgetary support, fully committed, for each subproject and made available to cover the costs of land acquisition, compensation, resettlement and rehabilitation within the agreed implementation period for the subproject; and adequate human resources for supervision, liaison and monitoring of land acquisition, resettlement and rehabilitation activities.

(x) Appropriate reporting, internal and external monitoring and evaluation mechanisms will be identified and set in place as part of the resettlement management system.

(xi) Key information in each RP will be translated into Filipino or, where necessary, the local language and placed in the WD's offices for the reference of APs as well as other interested groups.

(xii) ADB shall not approve any award of civil works contract for any subproject to be financed from the loan proceeds unless following detailed design and based on detailed measurement survey (DMS), the RP has been submitted to and approved by ADB.

IV. THE PROJECT ENTITLEMENTS

16. The EA through its Project Management Unit (PMU) and the WDs as the IA/sub- borrowers through their respective Project Implementation Units (PIUs) for the infrastructure investment covered under the Project, will ensure that the RP activities of any subproject submitted for funding under the sector loan are conducted in accordance with ADB's Policy on Involuntary Resettlement and the Philippine Government's applicable laws and regulations.

- **Cut-off Date**. All APs who are identified in the subprojects sites on the cut-off date will be entitled to compensation for their affected assets and rehabilitation measures adequate to assist APs to improve or at least maintain their pre-project income- earning capacity, production levels, and living standards. The cut-off date will be the first day of the census in each subproject site conducted during project feasibility stage. Those who enter in the subproject site illegally after the cut-off date will not be entitled to compensation or any form of subproject assistance.

- **Potential Impacts and Entitlements. Table 16.3** provides the types of losses and corresponding nature and scope of entitlements. However, this matrix may not cover all resettlement impacts and/or losses specific and particular to each subproject. The DMS will be the basis for the determining the final entitlements based on the actual impact and/or losses, appropriate project assistance, relocation and, special assistance to poor and vulnerable groups during the preparation of the RP. A replacement cost survey will be carried out to determine the actual replacement costs and rates.

- **Donation.** Where individuals opt to make voluntary contribution of affected land, this will be acceptable only with the following safeguards in place: (i) full consultation with APs on project entitlements with consultations conducted in a free and transparent manner, (ii) ensuring that voluntary contributions do not severely affect living standards of households and are linked directly to benefits for the AP, (iii) any voluntary contribution will be confirmed through verbal or written record and verified by an independent third party (such as representative of a peoples' organization, NGO or legal authority), (iv) adequate grievance redress mechanisms are in place, (v) land and non-land assets contributed do not belong to the poorest and most vulnerable households, (vi) the land is free from any legal disputes or controversies, and (vii) land transactions are supported by transfer of titles.

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Table 16.3: Project Entitlement Matrix

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
1a	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	APs listed in the survey. with proof of ownership/ claim to the land.	Compensation for **entire loss of land** (i.e., the whole land is affected by the Project, or the residual unaffected portion is no longer viable for continued use and, therefore, the entire land will be acquired by the Project) and **partial loss** (i.e., only a portion of the land of the AH is acquired by the Project and the residual unaffected portion still viable for continued use or meets the expected yield) is based on the principle of replacement cost which is the method of valuing assets to replace the loss at prevailing market value, plus any transaction costs such as administrative charges, taxes, registration and titling costs. If AH is found to be severely affected (i.e., the loss is equivalent to 10% or more of their total income capacity or they are physically displaced from housing or place of business), the AH will be provided additional assistance as discussed under item 4 (severe impacts) of this entitlement matrix.	Computation of valuation of land must be transparent and explained to the entitled persons If there are grievances in valuation, entitled persons must be informed of the grievance mechanism
1b	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	APs without proof of ownership/ claim to the land they occupy.	Not entitled to payment for land, but will be compensated for non-land assets (structures, crops, trees, etc) at replacement cost. Entitled to cash or in-kind assistance if severely affected.	List of non-land assets to be compensated must be signed off by entitled persons Vulnerable and severely affected persons to be identified during census

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
1c	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	Tenants/ shareholders	Entitled to compensation for non-land assets (structures, crops, trees) at replacement cost. Entitled to cash or in-kind assistance if severely affected.	List of non-land assets to be compensated must be signed off by entitled persons Vulnerable and severely affected persons to be identified during census
2	Permanent full or partial loss of structures or income-generating spaces	Residential/ commercial/ institutional structures and income-generating spaces	AP owners located at the site during the cut-off date of the survey, regardless of tenure and status (i.e., owners, renters, sharers, caretakers)	Compensation for permanent houses and other structures affected either in **full** (i.e., entire main structure is affected, or the unaffected portion of the main structure is no longer viable for continued use), or in **part** (i.e., only a portion of the main structure of the house, house-and-store, or shop is affected and the remaining unaffected portion is still viable for use), will be determined according to replacement value for materials and labor to rebuild similar structures, at prevailing market prices in the locality. In determining replacement costs, depreciation of assets and salvage value of materials will not be taken into account. In determining compensation for movable structures including houses, where the structures can be moved easily, transfer, relocation and repair allowances will be calculated. An assessment of material replacement will be made, based on the condition of materials, with valuations calculated based on standard replacement and restoration costs. Provision of transition and moving allowance/assistance (cash or in-kind) for	List of structures to be compensated must be signed off by entitled persons Computation of the valuation of affected structures must be explained to entitled persons If there are grievances in valuation, entitled persons must be informed of the grievance mechanism

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
				APs that opt for voluntary relocation.	
3	**Permanent loss of crops and trees**	All trees of any age, crops	All APs regardless of tenure status	Cash compensation equivalent to (i) for annual standing crops, prevailing market value of crops; (ii) for perennial crops, prevailing market value given the type, age and productive value; and (iii) for trees, the productive value or the annual production as determined by the municipal agriculturist multiplied by the estimated number of productive years; all at the time of compensation. 60 days notice to allow owners to harvest any standing crops	List of trees and crops to be compensated must be signed off by entitled persons Computation of the valuation of trees and crops must be explained to entitled persons
4	**Severe impacts (more than 10% of productive income affected) on productive assets**	Land-based income, income from trees and crops, income from business	All APs losing 10% or more of their productive income from business and other income-generating assets. regardless of tenure status	Compensation for lost income based on actual impacts as a result of DMS. Appropriate rehabilitation measures and income restoration programs Project assistance for affected households such as job referral and placements and assistance to be trained additional skills for local employment or income-generating ventures. Additional project assistance (cash or in-kind) to poor and vulnerable households will be provided	Severely impacted (more than 10% impacted) households to be identified during census
5	**Temporary loss/impact on assets during construc-tion**	Residential structures, improvements and other physical assets affected during	APs with improvements of their residential or business structure (e.g. fences, driveways)	Cash or in-kind compensation for fixed and movable assets such as houses, pavements, fences community facilities, farm structures for animals and farmers at replacement cost. Restoration or replacement of a fixed asset one month after construction of water transmission and distribution lines,	List of affected structures to be signed off by entitled persons Schedule construction activities to minimize the period of disruption Computation of the compensation must be explained to entitled persons

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
		construction	and other physical assets on lots to be traversed by transmission pipes	sanitation facilities, reservoirs and other water facilities. Compensation for residential structures and community facilities, lost in full or part	
6	**Temporary loss of income**	Income from livelihood, business or employment	APs with businesses or employment disrupted during construction	Compensation for lost income or wages calculated at prevailing and/or average historical rate multiplied by the number of days of disruption	APs and corresponding income losses per day to be identified during census
7	**Temporary loss/impact on access**	Roads, pathways and access routes used by APs to conduct economic, social or cultural activities	APs whose access to land or facilities will be affected during construction	Alternative access routes shall be provided to temporarily replace the affected route.	Convincing owners of land to provide temporary access on their land
8	**Any unanticipa-ted impacts/ losses**		APs entitled to compensation as per RF	Any unanticipated impact or loss will be mitigated as per WDDSP RF	Close monitoring of unanticipated impacts during implementation phase

V. SCREENING AND PREPARATION OF RESETTLEMENT PLANS

A. Screening

17. Resettlement screening for all subprojects will take place during the identification and selection process for funding by the Project. The EA with the assistance of a social development specialist for resettlement will determine impacts and prepare RPs based on the ADB's and Philippine Government's safeguards requirements on involuntary resettlement. Assessment of project impact such as physical displacement, loss in productive and income assets, gender, ethnicity and vulnerability impact will be appraised, and measures to mitigate them will be included in the RPs.

B. Resettlement Plan Preparation

18. If resettlement impacts cannot be avoided for a subproject, the preparation of an RP is required. Preparation of an RP follows the procedures below:

(i) Carry out a census of all the APs;
(ii) Undertake DMS[6] of all losses of all APs. At the same time, inform potential APs (without discrimination) of the subproject, its likely impacts, and principles and entitlements as per the RF;
(iii) Conduct a socio-economic survey (SES)[7] of at least 10% of all affected households, and 100% of severely affected households;
(iv) Carry out replacement cost (valuation) survey for various types of affected assets as a basis for determining compensation rates at replacement cost. Identify losses in accordance with the entitlement matrix[8];
(v) Provide project and resettlement information to all affected in a form and language that are easy to understand, and closely consult with them on compensation and resettlement options, including relocation sites and economic rehabilitation;
(vi) A draft RP will be prepared with an implementation schedule that harmonizes with the project schedule, a budget, procedures for grievance mechanism and monitoring and evaluation;
(vii) Public consultation to be conducted throughout the project cycle.

C. Surveys for Resettlement Plan Preparation

19. **Socio-economic Survey (SES).** Apart from the basic socioeconomic information[9] on APs that will be collected as part of the Inventory of Loss survey (IOL), a separate SES will be carried out to be carried out to collect detailed socioeconomic information from 10% of marginally affected APs and 100% of severely affected APs, disaggregated by gender. The purpose of the SES is to provide baseline data on APs or households to assess resettlement impacts and design rehabilitation measures, and to be used for resettlement monitoring. The scope of data to be collected via the SES includes:

[6] Data will be gender and ethnic minorities disaggregated.
[7] It will include gender analysis and data will be gender and indigenous peoples disaggregated.
[8] If there are new categories of APs and or losses identified during the DMS (aside from those described in the entitlement matrix), the entitlement will be revised in accordance with ADB's policy and guidelines.
[9] Including AP civil status, gender, age, household size, monthly household income from different sources, tenure status over affected assets.

(i) Names and basic information about the households (civil status and gender, information on women-headed households, elderly members, number of family members, their education levels, etc.);

(ii) housing, institutional, commercial/selling spaces and security of tenure that denotes status of ownership, type of real property and their location;

(iii) economic profile of the households which indicates monthly incomes and expenses, information on savings, assets owned, and borrowings;

(iv) health, water and sanitation;

(v) access to basic services and facilities;

(vi) social networks as in membership in associations, types and projects of the associations, as registered voter(s) of the community, and type of assistance extended by the neighborhood;

(vii) risks and vulnerabilities (pertaining to environmental risks, calamities, impoverishment brought about by relocation, social exclusion by being very poor, and households headed by women, elderly, disabled, etc.), peace and order and discrimination experience in the community, in which all data collected will be disaggregated for gender.

20. **Assets Inventory.** An inventory of assets or losses survey (IOL) is needed to collect data on the affected assets from 100% of APs during the project preparatory stage. If data available is based on the preliminary design, the data will be finalized during the DMS following the completion of detailed engineering design. Data collected during the DMS will constitute the formal basis for determining AP entitlements and levels of compensation and project assistance. An updated RP will be prepared and implemented prior to commencement of civil works. A list of APs resulting from the DMS will be kept by the WD. For each AP, the scope of the data will include:

(i) Total and affected areas of land, by type of land assets;

(ii) Total and affected areas of structures, by type of structure (main or secondary);

(iii) Legal status of affected land and structure assets, and duration of tenure and ownership;

(iv) Quantity and types of affected crops and trees;

(v) Quantity of other losses, e.g., business or other income, jobs or other productive assets;

(vi) Quantity/area of affected common property, community or public assets, by type;

(vii) Computed replacement cost of affected assets, i.e., land, structures and improvements, income from business, crops and trees, etc.;

(viii) Ethnicity, gender of head of household, household size, primary and secondary source of household income, income of household headed by women, elderly or disabled;

(ix) Whether the affected land for acquisition is primary source of income;

(x) The AP's project information and/or knowledge of the subproject and preferences for compensation (cash or in-kind) as long as it is comparable to pre-project conditions and, as required provisions of relocation sites with comparable facilities and access to income sources and the provision of rehabilitation measures are in place.

21. **Replacement Cost (Valuation) Survey.** LWUA can also engage the services of a qualified private appraiser to carry out replacement cost surveys for land and non-land assets.

VI. CONSULTATION, GRIEVANCES REDRESS, AND DISCLOSURE

A. Consultation and Participation

22. The participatory and consultative process for the RP preparation will emphasize community participation aimed at increasing opportunities for both men and women to take active roles and responsibilities, harness their capacities and resources in planning, implementation and monitoring in all stages of the RP process such as in DMS, site identification, entitlement allocation, monitoring of impact and benefits, discussion and settlements of grievances and participation in meetings, and discussions pertinent to the subproject components. Information to be discussed with the community will include the (i) description and general schedule of the subproject; (ii) the DMS results; (iii) policy principles, and entitlements and special provisions; (iv) grievance procedures; (iv) the period for payments and displacement schedules; and (v) institutional responsibilities.

B. Grievance Redress

23. LWUA will create a Water District Grievance Redress Committee (WDGRC which will also handle resettlement) in each WD to determine qualified APs and safeguard their rights. The WDRC will be composed of the WD-PIU head as chair, concerned NGOs, barangay officials and households headed by women as members.

24. The Project's grievance redress mechanism shall in no way impede access to the formal legal system or the courts. The decision of the courts is for finality of case resolution. Below are the steps to be followed in filing grievances and the procedures for redress.

Step 1: The complainant provides the background and files the grievance/complaint verbally or in writing to the WDRC. If unwritten, the WDRC Secretary will put it in writing and will reproduce it in four copies for distribution; the original copy to WDRC; two for the WD-PIU; and one for the file of the complainant. The complainant, WDRC and representatives of PIU will meet to discuss the complaint and resolve it within 15 days.

Step 2: If no resolution or understanding is reached, the complainant files the grievance/complaint to the WDRC central desk at the PMU for it to be resolved within 15 days after filing. The written complaint shall be reproduced in four copies; the original to EA- PMU, two for WD-PIU, and one for the file of the complainant.

Step 3: Again, if no resolution or understanding is reached and if the grievance/complaint qualifies for hearing at the Municipal Trial Court (MTC) or Regional Trial Court (RTC), the household may request for assistance of the *pro bono* lawyer from the Public Attorney's office, through the WDRC. The *pro bono* lawyer shall assist the household in reproducing the formal complaint in five copies to be distributed as follows: the original to the appropriate court, one each for PMU, PIU, WDRC and for the file of the complainant.

Step 4: The MTC or RTC assesses the merit of the grievance/complaint, schedules the hearing and renders a decision. Appeals can be elevated to the high court. The Supreme Court's decision is final and executory.

Aggrieved parties may also inform the Office of Special Project Facilitators (OSPF) of the ADB of any project-related grievances.

APs will be exempted from all administrative and legal fees.

25. Unresolved grievance can be elevated to the proper courts. However, resorting to courts prior to availment of this complaint and grievance process will make the appellant's action dismissible, on the ground of non-exhaustion of administrative remedies. The WDRC will maintain a full record of all complaints and grievances received, and the actions taken.

C. Disclosure

26. As per ADB's Public Communications Policy (2012) and the Safeguard Policy Statement, 2009 (SPS), the EA (LWUA) and each IA (each WD) will disclose to the APs the draft RP and following detailed technical design and DMS or change in scope of the subproject, the updated RP. The RP will be uploaded on the EA's and ADB's websites. It will also be uploaded on the IA/WD's website, if it has one, or posted in a public place in the IA/WD's office.

27. Information from the RP for disclosure to APs includes: (i) compensation, entitlement, relocation and rehabilitation options; (ii) the DMS results; (iii) entitlement and special provisions; (iv) grievance procedures; (v) the schedule of payments/replacements of losses; and (vi) relocation and transfer schedule. This information will be made available in leaflets or brochures to APs at the WD's offices and the public information bulletin in Filipino or a language that is easy to understand in the locality where the subproject is situated.

VII. RELOCATION AND INCOME RESTORATION STRATEGY

28. The relocation and income restoration strategy will be designed with the APs during the preparation of the RP. No AP will be displaced until they are fully compensated and provided with project assistance and entitlements. APs will be provided with temporary or permanent place of land, residence (if needed), cash or in-kind assistance during disturbance or transition, and space for mixed-use (income and residence) within the vicinity of the subproject.

VIII. VULNERABILITY,GENDER AND ETHNICITY

29. This RF acknowledges that specific social groups may be less able to restore their living conditions, livelihoods and income levels; and may be at greater risk of impoverishment when their land and other assets are affected. The Project will identify any specific needs or concerns that need to be considered for ethnic minorities and other vulnerable groups such as landless, poor, and households headed by women, disabled, elderly or children without means of support.

A strategy with specific actions addressing gender and ethnicity needs, as required, will be included in each RP.

IX. INSTITUTIONAL ARRANGEMENTS

30. The overall responsibility for enforcing the RF, including RP preparation and implementation is with LWUA and the WDs. The PMU at LWUA will review and endorse the RPs to ensure compliance with the RF prior to ADB's approval. The PMU is responsible for the overall monitoring of the RPs of all subprojects. It will be assisted by project implementation consultants.

31. At the WD level, a PIU will be established and will be responsible for the preparation, updating and implementation of the RP. A resettlement focal person within the PIU will ensure that the social safeguards policies contained in the RF/RP are adhered to. The PIU will be responsible for (i) ensuring that sustained efforts will be made to enhance community relationships in the conduct of resettlement activities such as the DMS, physical design development and technical verifications, and the disclosure, preparation and implementation of income restoration program, (ii) timely delivery of compensation and entitlement to all APs, (iii) acting as grievance officers, and (iv) preparing quarterly resettlement progress reports.

X. MONITORING AND EVALUATION

32. Monitoring and evaluation of the RP implementation assesses the degree to which the resettlement activities have achieved the resettlement objectives. In harmony with the civil works schedule, it allows the proponent to assess its accomplishments against their desired outcomes. Specifically, monitoring defines the RP's progress and provides helpful information in assessing the following critical milestones in the RP: (i) compliance with the RF and RP; (ii) the availability of resources and efficient, effective use of these resources to implement resettlement activities in accordance with the implementation schedule; (iii) the establishment of a well- functioning resettlement unit during the course of project implementation; and (iv) identification of problems, if any, and corrective actions.

33. The PMU will develop internal monitoring indicators, procedures and reporting requirements for all subprojects. Periodic reports will be submitted by the PIU to the PMU and ADB. Reports will include: (i) the status of payment of compensation and provision of assistance to APs in accordance with the approved RP; (ii) coordination and completion of compensation and, as required, resettlement activities and commencement of civil works; (iii) adherence to public information dissemination and consultation procedures, and report on activities; and (iv) adherence to grievance redress procedures, and (v) an account of project activities.

34. The subprojects of the two pilot WDs (CKWD and MSFWD) have limited impacts and will thus not require external monitoring. For subsequent subprojects that are category B with limited impacts, external monitoring is a good practice but is not a requirement as per SPS. However, should the EA decide to engage an independent agency to conduct external monitoring, this will aim to ensure that provisions in the compensation and project assistance indicated in the RP are adhered to accordingly. External monitors, when engaged by the Project, will submit periodic monitoring reports. **Table 16.4** discusses the types of indicators and information required in the conduct of external monitoring and evaluation.

Table 16.4: Indicators for External Monitoring

Type of Indicators	Indicators	Information Required in Monitoring and Evaluation
Input Indicators	Staffing	• Number of WD staff assigned for RP implementation. • Number of Social Development and Resettlement Specialist(s) assigned by the PMU.
Process Indicators	Consultation, Participation, and Grievances Resolution	• Number of consultations and participation programs held with APs and various stakeholders. • PIBs distributed to APs. • Number and types of grievances received from APs and the number of days consumed by concerned GRCs in resolving them. • Number and names of representatives of community and APs who participated in the consultations and in RP implementation. • Reporting and feedback mechanism in place.
	Operational Procedures	• Types of forms used in recording the activities undertaken in RP implementation. • Type of database being maintained. • Adequacy of logistical support for implementing the RP; • Assess if the project policies in RP have adequately been complied with.
	Issues and Problems Encountered	• Indicate the issues and problems encountered in staffing, during consultations and grievances resolution, and in the execution of operational procedures. • Indicate number of consultations conducted to resolve issues and problems pertinent to compliance by the WD with the provisions of the RP.
Output Indicators	Compensation and Entitlement	• Indicate if the APs who are engaged in micro business that were affected were compensated for their temporary loss of business incomes due to project construction. • Indicate recorded disbursements to and acceptance of APs of their entitlement.

XI. IMPLEMENTATION SCHEDULE AND BUDGET

35. All costs relating to RP implementation are part of the subproject budget. Land acquisition, compensation for non-land assets, project assistance, subproject administration, monitoring, including contingencies will be funded by the WD. Subprojects with significant impacts will engage an external monitor.

36. The PMU will ensure the timely delivery of budget for the implementation of resettlement activities. All compensation and payments for land and non-land assets and assistance will be prepared by the PIU and the finance office of the WD. A compensation schedule chart approved by the WD will be undertaken before the project construction. Procedures for funds disbursement to APs will follow the new accounting rules and regulations of the Philippine

Government. The PIU in coordination with the budget and finance office of the WD will process the necessary documents for payments and compensation stipulated in the RP. Land acquisition, compensation and relocation of affected households cannot commence until the RP has been reviewed and approved by ADB. The PMU will allow construction activities in specific sites after all resettlement activities have been satisfactorily completed for that specific site, agreed compensation, project assistance, rehabilitation assistance is in place, and the site is free of all encumbrances.

ANNEX 1

SAMPLE TERMS OF REFERENCE FOR SOCIAL DEVELOPMENT AND RESETTLEMENT SPECIALIST AS PART OF PROJECT IMPLEMENTATION SUPPORT SERVICES

A. Project Background

1. The Water District Development Sector Project (the Project) will provide financing for improving water supply and sanitation services of water districts (WDs) in the Philippines. A feasibility study to prepare the Project has been undertaken, including documents on social safeguards to comply with ADB's financing requirements, among them the Resettlement Framework (RF) and the subproject Resettlement Plan (RP) for a pilot WD, Metro San Fernando Water District (MSFWD).

B. Objectives of the Consulting Services

2. The consulting services will support the Project by providing project implementation support on resettlement issues in the implementation of the Project. The services include support to the Local Water Utilities Administration (LWUA) and the WDs for conducting the Detailed Measurement Survey (DMS), updating and implementation of MWSFWD's RP based on the detailed engineering design, and preparing RPs for other subprojects to be funded under the sector loan.

3. The services will be provided to the staff of the Project Management Unit (PMU) to be established in LWUA, and to the staff of the Project Implementation Units (PIUs) of the implementing agencies (the participating WDs).

4. One national social development and resettlement consultant will be hired to provide project implementation support. They will be attached to the PMU to ensure that all work is carried out in accordance with the RF, which is in accordance with the SPS and national laws on resettlement. The consultant will bring management and technical experience and proven methods from other projects to complement and build upon the EA's knowledge of project context and implementation experience in the Philippines. The consultant will have a minimum of 8 years experience in resettlement.

C. Scope of Work - Social Development and Resettlement Specialist (National, 4 person-months)

5. The expert will:

a. Ensure all RPs and IPPs for all subprojects are in line with the RF and IPPF, which reflects both national regulations and the SPS.

b. Prepare RPs and IPPs in accordance with RF and IPPF; review and update MSFWD's RP and inventory of losses following detailed design, including (i) identification of affected assets and affected households, (ii) replacement cost of affected assets, and (iii) cost of affected trees and crops.

c. Assist PMU and WDs conduct necessary surveys and consultations with stakeholders, information campaigns and community participation; conduct follow-up

consultations as necessary with affected households to disclose project-related information including updated RPs and IPPs and grievance redress mechanism procedures.

d. Assist PMU and WDs with consultations and finalization of RPs and IPPs, as necessary during implementation, based on detailed design to reflect changes in impacts, mitigation measures, costs and monitoring plans including new compensation rates, updated budget and implementation schedules, as required; update RPs and IPPs as per detailed design and reassess all impacts case by case at the time of census update during the DMS.

e. Assist PMU in conducting public consultations, information campaigns and community participation.

f. Support PMU in ensuring that work carried out under RF and IPPF is in accordance with the SPS and national laws on resettlement and indigenous people: (i) Review institutional arrangements for RP and IPP implementation, assess adequacy of personnel and budget; (ii) Review PMU's and each PIU's internal monitoring system for RP and IPP implementation and internal monitoring reports, and recommend measures for enhancement; (iii) Provide necessary support and capacity building to PMU/EA and each PIU/WD for RP and IPP preparation and implementation, including orientation and training on RP and IPP activities and implementation mechanisms.

g. Review and reconfirm entitlement matrix and make necessary adjustments acceptable to the government and ADB.

h. Undertake due diligence assessment and prepare corrective action plans to identify permanent and temporary socio-economic impacts resulting from land acquisition, changes in land use or restrictions of access to assets and common property resources, and handle grievance and redress cases.

i. Define categories of impact and eligibility of affected households for compensation, and prepare entitlement matrix covering compensation for lost assets and income including assistance to achieve full replacement costs for lost assets, income and livelihoods.

j. Assist PMU monitor implementation of both involuntary resettlement and IP safeguards in accordance with updated and approved RPs and IPPs with a focus on community consultation, compensation assessment, and grievance procedures.

k. Assist PMU engage the services of a qualified private appraiser to carry out replacement cost surveys for land and non-land assets.

l. Assist PMU with monitoring and liaising with the external monitoring consultant as required and assist in RP and IPP monitoring and reporting formats.

m. Work closely with local authorities and resettlement committees at all levels on resettlement-related activities and assist PMU obtain local and national clearances and approvals for RPs and IPPs.

n. Establish and implement liaison mechanisms to ensure proper technical and logistical support between PMU, PIUs, local administrative authorities, resettlement committees and concerned government departments.

o. Review the operation and appropriateness of the grievance redress mechanism; identify issues, if any, and advise measures if necessary for speedy resolution.

p. Review and update the Consultation and Participation Plan including (i) the identification of key stakeholders; and (ii) key activities and their respective objectives.

q. Assist WDs in the implementation of the Consultation and Participation Plan, including (i) identification of barriers to participation and measures to overcome or resolve them; and (ii) identification of performance gaps and measures to address them.

Indigenous Peoples Planning Framework

March 2014

Republic of the Philippines: Water District Development Sector Project

Prepared by Local Water and Utilities Administration for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 19 March 2014)

Currency unit	–	Philippine peso (Php)
Php1.00	=	$0.0224074572
$1.00	=	Php 44.63

ABBREVIATIONS

ADB	–	Asian Development Bank
AH	–	affected household
AP	–	affected person
EA	–	executing agency
EMA	–	external monitoring agency
GAD	–	gender and development
GAP	–	gender action plan
HH	–	Household
IA	–	Implementing Agency
IOL	–	Inventory of losses
IP	–	Indigenous Peoples
IPP	–	Indigenous Peoples Plan
LGU	–	Local Government Unit
LWUA	–	Local Water and Utilities Administration
m^3	–	cubic meter
MSFWD	–	Metro San Fernando (La Union) Water District
NEDA	–	National Economic and Development Authority
PIB	–	public information booklet
PIU	–	project implementation unit
PMU	–	project management unit
PPTA	–	project preparatory technical assistance
RF	–	Resettlement Framework
RP	–	Resettlement Plan
SES	–	Socio economic Survey
SPS	–	ADB's Safeguard Policy Statement (2009)
WD	–	Water District
WDGRC	–	Water District Grievance Redress Committee

GLOSSARY

Ancestral Domain Sustainable Development & Protection Plan (ADSDPP)	–	Consolidation of plans of Indigenous Peoples (IPs)/Indigenous Cultural Communities (ICCs) within an ancestral domain for the sustainable management and development of their land and natural resources as well as the development of human and cultural resources based on their indigenous knowledge systems and practices.
Affected People (APs)	–	includes any person, entity or organization affected by the Project, who, on account of the involuntary acquisition of assets in support of the implementation of the Project, would have their (i) standard of living adversely affected; (ii) right, title or interest in all or any part of a house and buildings, pavements and other physical improvements, land (including residential, commercial, agricultural, plantations, forest and grazing land), water resources, annual or perennial crops and trees, or any other moveable or fixed assets acquired or possessed, in full or in part, permanently or temporarily; and (iii) business, profession, work or source of income and livelihood lost, partly or totally, permanently or temporarily.
Ancestral Domain	–	Areas generally belonging to IPs comprising lands, inland waters, coastal areas, and natural resources therein, held under a claim of ownership, occupied or possessed by the IPs, by themselves or through their ancestors, communally or individually since time immemorial, continuously to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth or as a consequence of government projects or any other voluntary dealings entered into by government and private individuals/corporations, and which are necessary to ensure their economic, social and cultural welfare. It will include ancestral lands, forests, pasture, residential, agricultural, and other lands individually owned whether alienable and disposable or otherwise, hunting grounds, burial grounds, worship areas, bodies of water, mineral and other natural resources, and lands which may no longer be exclusively occupied by IPs but from which they traditionally had access to for their subsistence and traditional activities, particularly the home ranges of IPs who are still nomadic and/or shifting cultivators.
Ancestral Land	–	Land occupied, possessed and utilized by individuals, families and clans who are members of the IPs since time immemorial, by themselves or through their predecessors-in-interest, under claims of individual or traditional group ownership, continuously, to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth, or as a consequence of government projects and other voluntary dealings entered into by government and private individuals/corporations including, but not limited to, residential lots, rice terraces or paddies, private forests, swidden farms and tree lots.
Certificate of Ancestral Domain Title (CADT)	–	A title formally recognizing the rights of possession and ownership of IPs over their ancestral domains identified and delineated in accordance with the Indigenous Peoples Rights Act (IPRA).
Certificate of Non-Overlap	–	A certificate issued by the National Commission on Indigenous Peoples (NCIP) attesting to the fact that the area where a particular

plan, program, project or activity will be done, does not overlap with or affect any ancestral domain.

Certification Precondition (CP) – A certificate issued by the NCIP, signed by the Chairperson, attesting to the grant of free and prior informed consent (FPIC) by the concerned IPs/ICCs after appropriate compliance with the requirements provided in this guidelines.

Free and Prior Informed Consent – A consensus of all members of an IP community to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity, in a language and process understandable to the community.

Rehabilitation – means assistance provided to severely affected APs due to the loss of 10% or more of productive assets (i.e., farmland, crops and trees, vegetable garden, etc.), incomes, and employment, or when sources of living such as shops and places of employment have to be reconstructed completely and/or relocated. The livelihood support may be given in cash or in kind or a combination of the two in order to improve or at least achieve full restoration of living standards to pre-project levels.

Vulnerable Groups – are distinct groups of people who might suffer disproportionately or face the risk of being further marginalized by the effects of resettlement and specifically include: (i) households headed by women, the elderly or disabled, (ii) households living below the poverty threshold, (iii) the landless, and (iv) indigenous people and ethnic minorities.

NOTE

In this report, "$" refers to US dollars.

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I. INTRODUCTION

1. The Water District Development Sector Project (WDDSP) aims to improve health conditions in the proposed service expansion areas through the improvement in the distribution of urban water and sanitation services. The project will be implemented as a sector loan. The Executing Agency (EA) is the Local Water and Utilities Administration (LWUA) while the implementing agencies (IAs) are the local water districts (WD) in the subproject areas.

2. The Asian Development Bank's (ADB) Poverty Reduction Strategy recognizes that indigenous peoples (IPs) may suffer from social exclusion, and lack basic services and social capital, and therefore remain in poverty. As such, they require special support.

3. IPs are accorded protection by the project based on ADB's Policy on Indigenous Peoples as contained in its *Safeguard Policy Statement (2009)* as well as on the country's *Indigenous People's Rights Act of 1997*.

4. The proposed sites for water supply expansion in the franchise area of Metro San Fernando (La Union) Water District and for water supply expansion and for the septage treatment in the franchise area of City of Koronadal Water District (CKWD) being considered for the Project do not have distinct IP groups which may be affected in any way by the proposed infrastructure interventions. Should there be any IPs in other subproject areas to be identified during implementation of the sector loan, an Indigenous Peoples Plan (IPP) shall be prepared in accordance with the Indigenous Peoples Planning Framework (IPPF).

II. OBJECTIVES AND POLICY FRAMEWORK

5. The principles and objectives governing the preparation and implementation of IPPs shall be consistent with applicable Philippine laws and ADB safeguard policies on IPs. They aim to uphold the dignity, rights and well-being of IP communities and their right to participate in decision-making on development projects, programs and plans that affect their rights, lives, and well-being.

A. APPLICABLE PHILIPPINE LAWS ON INDIGENOUS PEOPLES

6. To date, the most comprehensive law recognizing and protecting the rights of IPs in the Philippines is Republic Act 8371 also known as the Indigenous Peoples Rights Act (IPRA) enacted in 1997. Pertinent provisions of the law include:

a. **Definition of indigenous peoples**. Under the IPRA, the term Indigenous Peoples/Indigenous Cultural Communities (IPs/ICCs) "refers to a group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as an organized community on communally-bounded and defined territory, and who have, under claims of ownership since time immemorial occupied, possessed customs, traditions and other distinctive cultural traits, and who have, through resistance to political, social and cultural inroads of colonization, non-indigenous religions and cultures became historically differentiated from the majority of Filipinos. IPs/ICCs shall likewise include peoples who are regarded as indigenous on account of descent from the populations which inhabited the country at the time of conquest or colonization or at the time of inroads of non-indigenous religions and cultures or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions, but

who may have been displaced from their traditional domains or who may have resettled outside their ancestral domains." (Sec. 3.h)

b. **Establishment of the National Commission on Indigenous Peoples (NCIP) and defining its powers and functions**. The NCIP "shall be the primary government agency responsible for the formulation and implementation of policies, plans and programs to promote and protect the rights and well-being of the IPs/ICCs and the recognition of their ancestral domains and their rights thereto" (Sec.38). As such, it is mandated to protect and promote the interest and well-being of the IPs/ICCs with due regard to their beliefs, customs, traditions and institutions" (Sec. 39). Among its powers and functions that are pertinent to the WDDSP are: (i) to issue certificates of ancestral land/domain title (sec 44.e); (ii) to enter into contracts, agreements or arrangement with government or private agencies as may be necessary to attain the objectives of the IPRA (Sec. 44.f) (iii) to coordinate development programs and projects for the advancement of IPs/ICCs and to oversee their proper implementation (Sec 44.h); (iv) to issue appropriate certifications as a pre-condition to the grant of permit, lease, grant or any similar authority for the disposition, utilization, management or appropriation by any private individual, corporate entity or government agency on any part or portion of the ancestral domain, taking into consideration the consensus approval of the IPs/ICCs (Sec 44.m).

c. **Right to decision-making and participation.** The IPRA explicitly upholds the right of IPs/ICCs to "determine and decide priorities for development affecting their lives, beliefs, institutions, spiritual well-being, and the lands they own, occupy or use. They shall participate in the formulation, implementation and evaluation of policies, plans and programs for national, regional and local development which may directly affect them" (Sec. 17). They also have the "right to participate fully, if they so choose, at all levels of decision-making in matters which may affect their rights, lives and destinies through procedures determined by them as well as to maintain and develop their own indigenous political structures (Sec. 16).

d. **Free and prior informed consent** is defined under IPRA as "the consensus of all members of the IPs/ICCs, to be determined in accordance with their respective customary laws and practices, free from any external manipulation, interference and coercion, and obtained after fully disclosing the intent and scope of the activity in a language and process understandable to the community" (Sec. 3.g).

e. **Natural resources within ancestral domains.** "The IPs/ICCs shall have the priority rights in the harvesting, extraction, development or exploitation of any natural resources within the ancestral domains" (Sec. 57).

7. Other relevant laws include the following:

8. **The Comprehensive Agrarian Reform Law or CARL (RA 6657)**, which requires the government to apply the principles of agrarian reform, or stewardship, whenever applicable, in the disposition or utilization of other natural resources, including lands of the public domain, and their lease or concession, suitable to agriculture, subject to prior rights of indigenous communities to their ancestral lands.

9. **The Local Government Code of 1991 (RA 7160)** provides IPs with the option to establish tribal barangays as similarly recognized by the IPRA.[1]

[1] Section 18 of the IPRA states that IPs "living in contiguous areas or communities where they form the predominant population but which are located in municipalities, provinces, or cities where they do not

10. **The National Integrated Protected Areas System (NIPAS) Act of 1992 (RA 7586)** safeguards protected areas (PAs) from further encroachment. It allows the implementation of development projects with compatible uses, or which enhance the protection of these PAs. It includes specific provisions that protect the rights of IP communities to their ancestral domain.[2]

11. **The Philippine Mining Act of 1995 (RA 7942)** requires proponents of mining projects in IP areas to secure an IPs' free and prior informed consent.

12. **The Conservation and Protection of Wildlife Resources and their Habitats Act of 2001(RA 9147)** mandates that the collection of wildlife by IPs may be allowed for traditional use and not primarily for trade.[3]

B. ADB POLICY PRINCIPLES

13. The objective of ADB's Safeguard Policy Statement (2009) and its Policy on Indigenous Peoples is to design and implement projects in a way that fosters full respect for IPs' identity, dignity, human rights, livelihood system, and cultural uniqueness as defined by the IPs themselves so that they (i) receive culturally appropriate social and economic benefits, (ii) do not suffer adverse impacts as a result of project, and (iii) can participate actively in projects that affect them.

14. ADB's Policy on Indigenous Peoples defines "indigenous peoples" in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; (iii) customary cultural, economic, social or political institutions that are separate from those of the dominant society and culture, and (iv) a distinct language, often different from the official language of the country or region. In considering these characteristics, national legislation, customary law, and any international conventions to which the country is a party will be taken into account. A group that has lost collective attachment to geographically distinct habitats or ancestral territories in the project area because of forced severance remains eligible for coverage under this policy.

15. To achieve the above objective, the following principles will be observed:

a) Screen early on to determine (i) whether IPs are present in, or have collective attachment to, the subproject sites; and (ii) whether subproject impacts on IPs are likely.

b) Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential subproject impacts, both positive and adverse, on IPs. Give full consideration to options the affected IPs

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constitute the majority of the population, may form or constitute a separate barangay in accordance with the Local Government Code on the creation of tribal barangays"

[2] Related to this is the Implementing Rules and Regulations (IRR) of Department AO (DAO) 92–25 that states "The zoning of a protected area and its buffer zones and management prescriptions within those zones will not restrict the rights of indigenous communities to pursue traditional and sustainable means of livelihood within their ancestral domain unless they so concur."

[3] "Traditional use" means utilization of wildlife by indigenous people in accordance with written or unwritten rules, usage, customs, and practices traditionally observed, accepted and recognized by them.

prefer in relation to the provision of subproject benefits and the design of mitigation measures. Identify social and economic benefits for affected IPs that are culturally appropriate and gender and inter-generationally inclusive and develop measures to avoid, minimize, and/or mitigate adverse impacts on IPs.

c) Undertake meaningful consultations with affected IP communities and concerned IP organizations to solicit their participation in: (i) designing, implementing and monitoring measures to avoid adverse impacts or when avoidance is not possible, to minimize, mitigate, or compensate for such effects; and (ii) tailoring subproject benefits for affected IP communities in a culturally appropriate manner. To enhance IPs' active participation, subprojects affecting them will provide for culturally appropriate and gender inclusive capacity development and establish a culturally appropriate and gender inclusive grievance mechanism to receive and facilitate resolution of the IPs' concerns.

d) Ascertain the consent of affected IP communities to the following project activities: (i) commercial development of the cultural resources and knowledge of IPs; (ii) physical displacement from traditional or customary lands; and (iii) commercial development of natural resources within customary lands under use that would impact the livelihoods of the cultural, ceremonial, or spiritual uses that define the identity and community of IPs. For the purposes of policy application, the consent of affected IP communities refers to a collective expression by the affected IP communities, through individuals and/or their recognized representatives, of broad community support for such subproject activities. Broad community support may exist even if some individuals or groups object to the subproject activities.

e) Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected IP communities participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources and that the benefits are equitably shared.

f) Prepare an IPP that is based on the social impact assessment with the assistance of qualified and experienced experts and that draws on indigenous knowledge and participation by the affected IP communities. The IPP should include a framework for continued consultation with the affected IP communities during subproject implementation; specifies measures to ensure that IPs receive culturally appropriate benefits; identifies measures to avoid, minimize, mitigate, or compensate for any adverse subproject impacts; and includes culturally appropriate grievance procedures, monitoring and evaluation arrangements, and a budget and time-bound actions for implementing the planned measures.

g) Disclose a draft IPP, including documentation of the consultation process and the results of the social impact assessment in a timely manner, before subproject appraisal, in an accessible place and in a form and language(s) understandable to affected IP communities and other stakeholders. The final IPP and its updates should also be disclosed to the affected IP communities and other stakeholders.

h) Prepare an action plan for legal recognition of customary rights to lands or territories or ancestral domains when the project involves (i) activities that are contingent on establishing legally recognized rights to lands and territories that IPs have traditionally owned or customarily used or occupied, or (ii) involuntary acquisition of such lands.

i) Monitor implementation of the IPP using qualified and experienced experts; adopt a participatory monitoring approach, wherever possible; and assess whether the IPP's objective and desired outcome have been achieved, taking into account the baseline conditions and the results of IPP monitoring. Disclose monitoring reports.

C. GAP ANALYSIS

16. ADB's policy principles on IPs as outlined above are mostly consistent with the policies and principles found in the IPRA. The WDDSP will adopt ADB's policies as these have more direct and application to the specific circumstances of the Project. A possible gap pertains to the definition of free and prior informed consent (FPIC). Whereas the IPRA defines FPIC as a consensus of all members of the IP community, to be determined in accordance with customary laws and practices, ADB's policy defines consent as a collective expression of broad community support through individuals or recognized representatives. Reconciling the two policies, the WDDSP policy will follow legally mandated procedures for obtaining FPIC as required by IPRA. Consent may be expressed through individuals and/or recognized representatives and will be considered as consent if consensus was obtained through a community process conducted in accordance with customary laws or practices as certified by NCIP and fully documented in the subproject IPP.

D. CRITERIA FOR SELECTING AND SCREENING SUBPROJECTS AND COMPONENTS

17. In selecting and screening project components and subprojects, likely impacts, both positive and negative, on IP groups will be considered. Subprojects and project components that are likely to result in negative impacts for IPs should be avoided. Should any issues be identified and not resolved, then the subproject should be rejected as infeasible unless there are extenuating circumstances that require further action.

18. If certain project components or subprojects with negative impacts are unavoidable in order to bring about greater benefits to the local population, including IP communities or groups, an IPP will be prepared containing the measures to be undertaken to minimize, mitigate and compensate for the negative impacts and ensure that the IP population is not disadvantaged in any way because of the Project, ensure the meaningful and culturally-appropriate participation of the IP groups in the planning and implementation of the subproject, that they are equal beneficiaries of the subproject, and that project benefits are culturally-appropriate.

III. IDENTIFICATION OF AFFECTED INDIGENOUS PEOPLES

19. The presence of some of the following characteristics in varying degrees is used to identify tribal or indigenous communities in the Philippines:

(i) A close attachment to their ancestral territories and natural resources.

(ii) Self-identification and identification by others as members of a distinct cultural group.

(iii) An indigenous language, often different from the national language.

(iv) The presence of distinct social, cultural and political institutions.

(v) Primarily subsistence oriented production.

20. The total IP population in the Philippines is approximately 12-15 million. There are about 171 ethnolinguistic groups.[4] The exact numbers of IP communities which are likely to be affected will be determined for each subproject. Subprojects may potentially affect IP households in ancestral domains, upland barangays and water source communities. There may also be concentrated IP populations or migrant ethnic groups in rural and urban settings. Potential impacts may include restrictions in the use of land and water resources traditionally used by the IP communities or within their ancestral domain, and their exclusion from project benefits if the water source communities are not part of the targeted service areas of the project. Potential positive effects may include the IP communities' increased access to water and sanitation services and provision of livelihood activities that are compatible with watershed enhancement.

21. The initial identification of IPs in a subproject area will be based on population data submitted by the water district (WD) in its initial subproject application. The initial social impact assessment should establish the presence of IPs, if any, and provide an overview of the IP population in terms of territory occupied within the subproject site, to ensure IP participation at the earliest instance.

22. There are no distinct IP groups which may be affected in any way by the proposed infrastructure interventions of the subprojects of the pilot WDs. In the City of Koronadal, there are IPs living in potential water source areas. Two of the most well-known IPs in the City of Koronadal area are the B'laan and the T'boli. They live in the regions between northwestern Koronadal to Lake Sebu (B'laan) and between Lake Sebu to Lake Buluan (T'boli). The T'bolis also inhabit the areas between Lake Buluan and the highlands of Davao City. However, the proposed subproject of CKWD will not be tapping water sources in the areas where there are IP groups. Watershed management is not a component of this subproject.

IV. SOCIAL IMPACT ASSESSMENT AND INDIGENOUS PEOPLES PLAN FOR SUBPROJECTS AND/OR COMPONENTS

23. A social impact assessment, including carrying out a socioeconomic survey (SES) shall be carried out by the implementing agency (IA) with the support of the project implementation consultants. Information gathered through the SES will provide baseline information on IP and/or ethnic minority living conditions and any challenges to their effective participation in the Project, which will be used in the development of specific actions in the IPP to address these concerns and maximize benefits to ethnic minority communities. Outputs of the social impact assessment will include the following:

a. A review of the legal and institutional framework applicable to IPs in the subproject context.
b. Baseline information on the demographic, social, cultural and political characteristics of the IP communities, the land and territories they have traditionally owned or customarily used or occupied; and the natural resources on which they depend.
c. Key project stakeholders and a culturally appropriate and gender-sensitive process for meaningful consultation with IPs at each stage of project preparation and implementation.

[4] Indigenous Peoples of the Philippines, http://www.adb.org/Documents/Reports/Indigenous_Peoples/PHI/chapter_3.pdf

d. An assessment, based on meaningful consultation with the affected IP communities, of the potential adverse and positive effects of the project and its components, including a gender sensitive analysis of the specific vulnerabilities of, and risks to, the affected IPs.

e. A gender-sensitive assessment of the IPs' perceptions about the project and its impact on their social, economic and cultural status.

f. Measures necessary to avoid, minimize, mitigate and/or compensate for adverse effects, as determined based on meaningful consultation with the affected IP communities.

24. Data sets include population size in relation to total population of franchise area, a profile of the economic activities of the group/s, differences in socioeconomic status between IPs and majority populations, identification of the existing problems in performing economic activities or access to basic services such as water and sanitation, and local government capacity in addressing IP issues, particularly in connection with development projects.

25. Guidelines to be observed in conducting the social impact assessment are as follows:

- IPs shall be represented[5] in the socio-economic survey that will be conducted. Data will be gathered to identify vulnerable groups, indigenous knowledge systems and practices, and structures that can help improve management of water user groups and natural resources.
- Design activities will include a participatory walk-through with members of the IP community, local government officials and project technical staff. Specific issues that may affect IP group/affected persons will be formally noted at this point.
- The WD will identify the leadership of the IPs, and community consultation(s) will be convened to identify specific concerns related to project design and implementation for both water and sanitation.
- Guidelines for affected IP households/properties shall follow those established under the resettlement framework. Apart from compensation for affected assets, additional measures will be taken to improve their living conditions and not just return them to pre- disturbance status.
- The WD will assess whether IPs have any water access issues and should note whether any of these are due to ethnic factors.
- Indigenous knowledge shall be harnessed with the full participation and consent of the IP communities, including determining water sources and natural environmental flows and determining local products and economic opportunities for livelihood development.

26. A proposed IPP outline is found in Annex C. The IPPs will be submitted to and agreed upon by the Government of the Philippines (through the EA) and ADB.

V. CONSULTATION AND PARTICIPATION

27. WDDSP will adopt a culturally appropriate and participatory approach for IP communities, wherever they are identified to be within a subproject's target areas. IP and/or

[5] IP coverage in the SES will correspond to the relative proportion of IPs to the general population in the subproject area.

ethnic minority communities, where present in the project areas, will be meaningfully consulted[6] at each stage of subproject preparation and implementation.

28. The planning process shall include a separate community consultation process for IPs within the target area so that IP interests are fully reflected in the WD's plans. The subproject details and its outputs including potential project impacts and mitigation measures, will be disclosed at IP community level meetings and discussed with community groups through participatory focus groups. Groups to be involved in such consultations include IP leaders, IP organizations, IP women, representatives of traditional councils, and barangay and LGU representatives. Consultations will also be held with the National Commission on Indigenous Peoples (NCIP).

29. Consistent with the principle of social equity and environmental justice, the WD will make provisions to give IPs improved access to water and sanitation. The subproject design will be carried out with the support of IPs and/or those affected by project activities. The WD will ensure participation of IPs in all subproject activities and their equal participation in training programs (e.g. sanitation IEC) and evaluations. IP women's participation shall be encouraged through training and participation. Due to watershed degradation and emerging water issues in urban areas, it is critical to ensure sustainable water resources. The IPs' potential role in watershed management shall be recognized, since often they reside in the vicinity of watersheds and major water sources. The WDs can advocate for and support integrated resource management of such areas. Since affordability may be a problem, the WD may actively work with the private sector, NGOs and local government units to leverage resources to expand the reach of water and sanitation services in IP territory.

30. The approach is to improve development outcomes for indigenous communities through their informed participation and decision making. Detailed social analysis and field assessments can be guided by the ADB's Handbook for Incorporation of Social Dimensions in Project Design and the ADB Operations Manual on Indigenous Peoples.

31. The prior and free informed consent of affected IP communities as defined under the IPRA shall be secured in all cases involving the following project activities: (i) commercial development of the cultural resources and knowledge of IPs; (ii) physical displacement from traditional or customary lands; and (iii) commercial development of natural resources within customary lands under use that would impact the livelihoods of the cultural, ceremonial, or spiritual uses that define the identity and community of IPs. For the purposes of policy application, the consent of affected IP communities refers to a collective expression by the affected IP communities, through individuals and/or their recognized representatives, of broad community support for such project activities. Broad community support may exist even if some individuals or groups object to the project activities.

32. Such consent will be documented through a written attestation by the duly recognized representatives of the IP community and the documentation of the minutes of the consultations

[6] As per the ADB SPS (2009), meaningful consultation is defined as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

undertaken in which such consent was expressed, including a list of the names of the attendees along with their signatures or other forms of identification.

VI. DISCLOSURE

33. The affected IP community shall be informed of all project related information, including the social impact assessment, and shall be provided translated copies of the safeguard documents including the Resettlement Plan, the Gender Action Plan, the Indigenous Peoples Plan and the Environmental Impact Assessment Report. The responsibility center in the PIU/WD shall be responsible for disseminating the required information to the IP community.

34. The IPP shall describe the information disclosure, consultation and participation process with the affected IP communities during project preparation as well as the consultation and participation mechanisms to be used during implementation to ensure IP participation. The IPP will also summarize the IP communities' comments on the social impact assessment, identifies the concerns raised during consultations and how these have been addressed in project design.

35. In the case of project activities requiring broad community support and FPIC, the IPP shall document the process and outcome of the consultations for the project activities and safeguard measures addressing the impacts of these activities.

36. The IPP will confirm disclosure of the IPP to the affected IP communities. The IPPs shall be made available to the public through posting on the ADB website. The IPPF will be disclosed on websites of the EA and ADB.

VII. GRIEVANCE REDRESS MECHANISM

37. The Project's grievance redress mechanism (GRM) will be used as the mechanism for IPs to air project-related complaints or grievances. The IA with the support of project implementation consultants will inform indigenous groups about this system at the start of subproject implementation.

38. The Project's GRM, however, should not impede access to the country's jurisdiction or administrative remedies. To the extent possible, the resolution of grievances will be through traditional IP grievance resolution processes and systems, following the principle of precedence of customary laws in the IPRA. All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the EA.

39. The Water District Grievance Redress Committee (WDGRC, which will also handle IP issues) formed in each WD will receive grievance cases from affected IP community members. All the affected IP households will be informed of the GRM by means of community assemblies and/or the IP community leaders. The assistance of IP community leaders will be obtained to ensure that the grievance redress mechanism is accessible to the members of the community and is gender-inclusive. The WDGRC will be composed of the WD-PIU head as chair, concerned NGOs and barangay officials and women heads of households as members.

40. Cases of grievances will be documented in a culturally appropriate manner so as to establish a record of the nature of the grievance, the parties involved, the details of the discussion or deliberation on the case, and the agreement or decision reached which shall be signed or attested to in a manner customarily practiced by the parties concerned.

41. The decision of the court is for finality of case resolution. Below are the steps to be followed in filing grievances and the procedures for redress.

Step 1: The complainant, assisted if needed by a non-government organization (NGO) or an IP community leader, provides the background and files the grievance/complaint verbally or in writing to WDGRC. If unwritten, the WDGRC Secretary will put it in writing and will reproduce it in four (4) copies for distribution; the original copy to WDGRC, two are for the WD-PIU, and one for file of the complainant. The complainant, WDGRC, as well as representatives of PIU will meet to discuss the complaint and resolve it within 15 days.

Step 2: If no solution or understanding is reached within 15 days, the complainant files the grievance/complaint to the WDGRC central desk at the PMO for it to be resolved within 15 days after filing. The written complaint shall be reproduced in four (4) copies; the original to PMU/RC, two for WD-PIU, and one for the file of the complainant.

Step 3: Again, if no solution or understanding is reached within 15 days and if the grievance/complaint qualifies for hearing at the Municipal Trial Court (MTC) or Regional Trial Court (TRC), the household may request for assistance of the *pro bono* lawyer from the Public Attorney's office, through the WDGRC. The *pro bono* lawyer shall assist the household in reproducing the formal complaint in five (5) copies to be distributed as follows; the original to the appropriate court, one each for PMU, PIU, WDGRC and for the file of the complainant.

Step 4: The MTC or RTC assesses the merit of the grievance/complaint, schedules the hearing and renders a decision. Appeals can be elevated to the high court. The Supreme Court's decision is final and executory.

VIII. INSTITUTIONAL AND IMPLEMENTATION ARRAGEMENTS

42. WDDSP seeks to maximize the participation of IPs in the subproject areas, to ensure their equal inclusion in all subproject benefits, activities and training programs and to avoid or mitigate any adverse impacts of subprojects on IPs.

43. All IP activities will be carried out as part of the normal subproject development activities. Ethnic minority issues will be resolved or compensated through the agreed Project mechanisms and as established in the Project's resettlement framework/resettlement plan and in this IPPF.

44. Implementation of IPPs will be in partnership with NGOs and with concerned agencies such as the NCIP, Department of Environment and Natural Resources (DENR) and barangays and city government. Monitoring of the implementation of the IPPs will be the responsibility of the PMU at LWUA.

45. Survey and consultations will be done by the project preparation team. A responsibility center for social preparation, capacity building, social impact assessment, communication and preparation of IPPs, if required, shall be established within the WD. An NGO may be engaged to assist in the social development activities and shall be chosen following a selection process and criteria. (Please check Annex A: Sample Terms of Reference for NGO Participation.)

46. Since certain components require coordination with other agencies, the responsibility center is also designated to strengthen partnerships on such components as sanitation, pro-poor water provision, hygiene education and integrated watershed management plan implementation,

etc. Among others, partners for watershed management include DENR, NCIP, local government and appropriate agencies which may take the lead in plan implementation. Alternatively, the WD can initiate its own water source protection program. LWUA shall see to it that ADB's Policy on Indigenous Peoples is implemented through its monitoring and training support functions.

IX. MONITORING AND REPORTING ARRANGEMENTS

47. The PMU/LWUA, with assistance from the project implementation consultants, will be responsible for supervision and monitoring of IP- and ethnic minority-related issues for the Project, including documentation and reporting. The PMU will report on IPP implementation progress as part of quarterly project progress reports submitted to the EA and ADB. ADB supervision missions will also periodically review IPP progress and whether or not the subproject is successful in delivering culturally appropriate benefits and mitigating adverse impacts on ethnic minorities. The PMU will closely coordinate with the NCIP on monitoring of IP engagement, as per IPRA requirements.[7].

48. Some indicators relating to process as well as attainment of targets are:

- Social equity can be gauged by size of the population that is served/proportionally represented as targets for access to services and in the water user groups.
- Number of IP households vs. number benefited (for water and sanitation).
- Number of IP workers/staff hired.
- Enhanced role of IPs in community resource management.
- Mechanisms/organizations established.
- Number of livelihood options established/number benefited.
- Linkages established in support of resource management initiatives.
- Output of specific interventions planned—e.g. number of seedlings produced/planted; number of hectares reforested/rehabilitated; survival rate of seedlings planted; number of water user groups established, repayment of microfinance funds.
- Level and quality of participation of IPs—organization of sanitation/water user group, when appropriate; number of participants/women in survey, focus group discussion, key informant interview; number and type of issues resolved.

X. BUDGET AND FINANCING

49. Budget for data-gathering is built into project survey and consultation expenses, including inventory of losses (IOL) for affected persons. IPs shall be targeted as beneficiaries of appropriate and affordable water and sanitation services. This shall be reflected in cost estimates for public faucets, septic tanks and other project features.

50. A special opportunity exists to strengthen forestry stewardship by residents in the vicinity of watersheds. Budgetary support should be established for elements of an IPP such as community organizing, resource management planning and development of livelihood options for buffer zone communities. Budget components will depend on available funding from the

[7] Section 44 (h) in Chapter III of the IPRA mandates that the NCIP be involved in monitoring of project implementation in relation to indigenous peoples engagement.

WD's own resources, local government counterpart funds, Gender and Development funds and other external resources, and may include:

- Cost of appropriate and affordable water facility as determined by IP users.
- Microfinance allocation for appropriate sanitation facilities.
- Budgetary support for participatory watershed planning—this may be arranged as DENR/local government counterpart.
- Microfinance facility for development of compatible livelihood options such as seedling production, watershed protection, restocking of renewable resources to support rural industry such as bamboo and rattan, etc.
- Watershed management fund (may be managed as a component of WD operations or as contributions for implementation of a local watershed management plan).
- Water user fees, royalties or equivalent (which can be negotiated as contribution for watershed maintenance) – which may be 1% of gross income.
- Participatory monitoring and evaluation.

Annex A:
Sample Guide for NGO Engagement

1. The project shall invite applications for the pre-qualification process from organizations interested to be engaged as support organization for social development work in the Water District Development Sector Project (WDDSP).

2. Non-government organizations (NGOs) can be engaged for gender mainstreaming and community mobilization depending upon their capability to render the required services as shown in the criteria set for social activities both in pre-qualification and competitive bidding.

3. **Prerequisites for Pre-Qualification for NGOs.** A public notice in local newspaper and public billboards shall be published giving reasonable time for NGOs to apply for pre- qualification. The prerequisites to apply for pre-qualification shall be as follows:

- Must be registered as an NGO.
- Must have written constitution indicating objectives of organization.
- Must have its account audited each year and must submit the latest audit report.
- Must have at least two years of experience in implementation of participatory projects or community development in recent years.
- Newly established NGOs lacking two years of track record but staffed with adequate professionals in required disciplines having at least 5 years experience can also apply for corresponding pre-qualification package.
- Must have engaged professionals and other support staff or is in a position to engage staff.
- The organization must be based in the region or have permanent affiliated office in the province or city.
- The previously pre-qualified NGOs willing to apply for the present work are required to submit copies of renewal of registration and certificate of audit of preceding year.
- NGOs with female staff have an advantage.

4. **Competitive Bidding.** Evaluation of technical proposal and financial proposal will form the main basis for selection of organizations for social development work. Selection will be done by the water district (WD) with assistance of LWUA.

5. **Evaluation of Technical Proposals.** After preparing a list of organizations passing through pre-qualification process, WDDSP shall publish public notice for submission of technical and financial proposals from pre-qualified NGOs. Terms of reference for preparing technical proposal will be provided for competing organizations.

6. Evaluation of technical proposals for the social component will be done by scoring the marks on experience, concept and methodology, qualification and experience of proposed personnel, and financial soundness of the organization:

✓ Experience of organization	15
✓ Proposed concept and methodology	25
✓ Qualification and experience of proposed personnel	50
✓ Completeness of required document	10

7. The type of human resources required:

Type of Staff	Desired Qualification	Experience
Field Coordinator	Bachelor degree in any discipline	Two years in rural development
Community Organizer	Bachelor degree in social sciences	Two years in rural development
Community Mobilizer	Twelve years of schooling	Two years in the area

8. **Functions.** NGO may be contracted out to assist WD in community mobilization, microcredit, income generation, gender mainstreaming, organization of water user groups, training, and delivery of health and education services for the entire project site, with functions as follows:

a. Assist in conduct of socio-economic survey, consultations and disclosure on project.
b. Facilitate community planning for delivery of appropriate water and sanitation facilities.
c. Formation and training of user groups for common water and sanitation facilities.
d. Lending and management of microfinance facility for sanitation with training of organizations for community management.
e. Conduct information dissemination on hygiene and sanitation.
f. Assist WD in gender mainstreaming among clientele.
g. Assess training needs of water user groups and facilitate training and community meetings.
h. Participate in natural management planning and prepare resource management plan for specific area covered.
i. Mobilize external resources for water-related income generating projects, for identified natural resource management and livelihood options and to expand reach of project benefits—e.g. to increase number of beneficiaries for public faucets, sanitation through coordination with other agencies.
j. Facilitate integration of indigenous knowledge systems and practices in project planning and activities.
k. Establish participatory monitoring and evaluation system.
l. Training of WD staff and community volunteers on community organizing principles and techniques.

Annex B

Sample Budget
Formulation and Implementation of IPP

Expense Category	Proposed Budget
Socio-economic survey	PhP 50,000
Social preparation and NGO community organizing	PhP 1,250,000
Cost of appropriate and affordable water facility	PhP 30,000 for 3 public faucets
Funds for microfinance facility for development of compatible livelihood options such as seedling production, watershed protection, planting of renewable resources to support rural industry such as bamboo and rattan, etc.	PhP 1,500,000
Cost for provision of appropriate sanitation facilities	PhP 40,000 for 2 shared sanitation facilities
Support for participatory watershed planning activities – may be arranged as local government counterpart	PhP 10,000
Watershed management fund for area to be managed by the WD	PhP 500,000
Watershed management fund reflected as water user fees, royalties or equivalent (which can be negotiated for use in watershed maintenance)	computed as 1% of gross income
Monitoring and evaluation	PhP 20,000
Total	PhP 2,400,000+

Annex C

Outline Of An Indigenous Peoples Plan[8]

This outline is part of the Safeguard Requirements. An Indigenous Peoples Plan (IPP) is required for all subprojects with impacts on Indigenous Peoples (IPs). Its level of detail and comprehensiveness is commensurate with the significance of potential impacts on IPs. The substantive aspects of this outline will guide the preparation of IPPs, although not necessarily in the order shown.

A. **Executive Summary**. This section concisely describes the critical facts, significant findings, and recommended actions.

B. **Description of the Subproject.** This section provides a general description of the subproject; discusses project components and activities that may bring impacts on IPs; and identifies the subproject area.

C. **Social Impact Assessment.** This section:
- Reviews the legal and institutional framework applicable to IPs in the subproject context.
- Provides baseline information on the demographic, social, cultural, and political characteristics of the affected IP communities; the land and territories that they have traditionally owned or customarily used or occupied; and the natural resources on which they depend.
- Identifies key project stakeholders and elaborate a culturally appropriate and gender-sensitive process for meaningful consultation with IP at each stage of project preparation and implementation, taking the review and baseline information into account.
- Assesses, based on meaningful consultation with the affected IP communities, the potential adverse and positive effects of the subproject. Critical to the determination of potential adverse impacts is a gender-sensitive analysis of the relative vulnerability of, and risks to, the affected IP communities given their particular circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to those available to other social groups in the communities, regions, or national societies in which they live.
- Includes a gender-sensitive assessment of the affected IPs' perceptions about the subproject and its impact on their social, economic, and cultural status.
- Identifies and recommends, based on meaningful consultation with the affected IP communities, the measures necessary to avoid adverse effects or, if such measures are not possible, identifies measures to minimize, mitigate, and/or compensate for such effects and to ensure that the IPs receive culturally appropriate benefits under the subproject.

D. **Information Disclosure, Consultation and Participation.** This section:
- Describes the information disclosure, consultation and participation process with the affected IP communities that was carried out during project preparation;
- Summarizes their comments on the results of the social impact assessment and identifies concerns raised during consultation and how these have been addressed in project design;
- In the case of subproject activities requiring broad community support, documents the process and outcome of consultations with affected IP communities and any agreement resulting from such consultations for the subproject activities and safeguard measures addressing the impacts of such activities;
- Describes consultation and participation mechanisms to be used during implementation to ensure IPs participation during implementation; and
- Confirms disclosure of the draft and final IPP to the affected IP communities.

E. **Beneficial Measures.** This section specifies the measures to ensure that the IPs receive social and economic benefits that are culturally appropriate, and gender responsive.

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[8] Source: ADB. 2009. *Safeguard Policy Statement*. Manila.

F. **Mitigative Measures.** This section specifies the measures to avoid adverse impacts on IPs; and where the avoidance is impossible, specifies the measures to minimize, mitigate and compensate for identified unavoidable adverse impacts for each affected IP groups.

G. **Capacity Building.** This section provides measures to strengthen the social, legal, and technical capabilities of (a) government institutions to address IP issues in the subproject area; and (b) IP organizations in the subproject area to enable them to represent the affected IPs more effectively.

H. **Grievance Redress Mechanism.** This section describes the procedures to redress grievances by affected IP communities. It also explains how the procedures are accessible to IPs and culturally appropriate and gender sensitive.

I. **Monitoring, Reporting and Evaluation.** This section describes the mechanisms and benchmarks appropriate to the project for monitoring, and evaluating the implementation of the IPP. It also specifies arrangements for participation of affected IPs in the preparation and validation of monitoring, and evaluation reports.

J. **Institutional Arrangement.** This section describes institutional arrangement responsibilities and mechanisms for carrying out the various measures of the IPP. It also describes the process of including relevant local organizations and NGOs in carrying out the measures of the IPP.

K. **Budget and Financing.** This section provides an itemized budget for all activities described in the IPP.


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