PHILIPPINE BIDDING DOCUMENTS

Construction/Installation of 100mm (4”) Ø HDPE Pipe Distribution Line

Government of the Republic of the Philippines

December 2020

TABLE OF CONTENTS

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Republic of the Philippines
TANAY WATER DISTRICT
IFP Bldg., No. 41 F.T. Catapusan St., Tanay, Rizal
Telephone: 654-3891 / 654-4450 / 654-0033

Invitation to Bid for Construction/Installation of 100mm (4") Ø HDPE Pipe Distribution Line

1. The **Tanay Water District**, through the **Corporate Budget for 2020** intends to apply the sum of **Six Hundred Eighty Seven Thousand Eight Hundred Thirty Eight Pesos (₱ 687,838.00)** being the Approved Budget for the Contract (ABC) to payments under the contract for the **Construction/Installation of 100mm (4") Ø HDPE Pipe Distribution Line** located at Sitio Gayas Brgy. Kat-Bayani, Tanay, Rizal with **Purchase Requisition No. 09287**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The **Tanay Water District** now invites bids for the above Procurement Project. Completion of the Works is required within **62 Calendar Days**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

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

4. Interested bidders may obtain further information from **Tanay Water District** and inspect the Bidding Documents at the address given below during Monday – Friday, **8:00 am to 5:00 pm Except Holidays**.

5. A complete set of Bidding Documents may be acquired by interested bidders on **December 04, 2020 – January 05, 2021**, **Monday to Friday 8:00 AM – 5:00 PM Except Holidays** from given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **One Thousand Pesos (₱ 1,000.00)**. The Procuring Entity shall allow the bidder to present its proof of payment for the fees to be presented in person, by facsimile, or through electronic means.

   It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the Procuring Entity, provided that bidders shall pay the applicable fee for the Bidding Documents not later than the submission of their bids.

6. The **Tanay Water District** will hold a Pre-Bid Conference on **December 11, 2020, 2:00 PM** at **Tanay Water District Conference Room, 2/F IFP Bldg. #41 F. T. Catapusan St., Tanay Rizal** and/or through videoconferencing/webcasting via Zoom, which shall be open to prospective bidders.

7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before **January 05, 2021, 02:00 PM**. Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 15.

9. Bid opening shall be on **January 05, 2021, 02:00 PM** at **Tanay Water District Conference Room, 2/F IFP Bldg. #41 F. T. Catapusan St., Tanay Rizal** and/or through via Zoom. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

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

11. For further information, please refer to:

    Mr. Wilfredo R. Ognilla
    BAC Secretariat
    Tanay Water District
    2/F IFP Bldg. #41 F. T. Catapusan St.,Tanay Rizal
    Email Address : bacsec80@gmail.com
    Telefax: 8654-3891

12. You may visit the following websites:

    For downloading of Bidding Documents: **http://www.tanaywaterdistrict.gov.ph/**

December 04, 2020

(SGD) Engr. Armando H. Bongat
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, **Tanay Water District** invites Bids for the **Construction/Installation of 100mm (4") Ø HDPE Pipe Distribution Line**, with Project Identification Number **Purchase Requisition No. 09287**.

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

2. Funding Information

2.1. The GOP through the source of funding as indicated below for **2020** in the amount of **Six Hundred Eighty Seven Thousand Eight Hundred Thirty Eight Pesos (₱ 687,838.00).**

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

3. Bidding Requirements

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

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

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

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

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

5. Eligible Bidders

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

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at

least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

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

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

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

6. Origin of Associated Goods

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

7. Subcontracts

7.1. The Procuring Entity has prescribed that Subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address **Tanay Water District Conference Room, 2/F IFP Bldg., # 41 F.T. Catapusan St. Tanay, Rizal** and/or through videoconferencing/webcasting} as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

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

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

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

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

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

11. Documents Comprising the Bid: Financial Component

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

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

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

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

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

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

15. Bid Security

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

15.2. The Bid and bid security shall be valid until **120 Days**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

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

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

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

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

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

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as

required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: **Pipelaying Contracts**
7.1	No further instructions.
10.3	No further instructions.
10.4	The key personnel must meet the required minimum years of experience set below: Key Personnel — General Experience — Relevant Experience Project Engineer — 5 Years — Pipelaying Foreman — 5 Years — Pipelaying
10.5	The minimum major equipment requirements are the following: Equipment — Capacity — Number of Units Breaker — at least 40 kg — 1 Concrete Cutter — 1 Tampering Machine — 1
12	No further instructions.
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than **Thirteen Thousand Seven Hundred Fifty Six Pesos and 76/100 (₱ 13,756.76)** (2% of ABC), if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than **Thirty Four Thousand Three Hundred Ninety One Pesos and 90/100 (₱ 34,391.90)** (5% of ABC) if bid security is in Surety Bond.
19.2	No further instructions.
20	Excavation Permit from DPWH and LGU-Tanay.
21	Submission of construction schedule, PERT CPM and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the DOLE.

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

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

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

4. The Contractor's Obligations

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

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

5. Performance Security

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

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

6. Site Investigation Reports

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

7. Warranty

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

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

8. Liability of the Contractor

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

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

9. Termination for Other Causes

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

10. Dayworks

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

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods,

arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

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

12. Instructions, Inspections and Audits

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

13. Advance Payment

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

14. Progress Payments

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

15. Operating and Maintenance Manuals

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

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

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	No further instructions.
3.1	The possession of the site to the Contractor is within Ten (10) days after receipt of Notice to Proceed
6	No further instructions.
7.2	Two (2) years.
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within **Ten (10) Calendar Days** days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is **25% of the amount of the progress payment being billed.**
13	The amount of the advance payment is **not exceeding 15% of the Contract Price upon request**.
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	The date by which "as built" drawings are required is NOT LATER THAN 2 WEEKS AFTER THE COMPLETION OF THE PROJECT
15.2	The amount to be withheld for failing to produce "as built" drawings by the date required is **1% of the Contract Price**.

Section VI. Specifications

1. GENERAL CONDITIONS

1.1 Scope

This Standard Technical Specification details requirements for the Construction/Installation of 100mmØ HDPE Pipe Distribution Line at Sito Gayas, Brgy. Kat-Bayani, Tanay, Rizal

The main items of work to be constructed includes are the following:

a) Excavation for all structures and pipework.
b) Supply and installation of pipe and tubing works and fittings.
c) Compaction of backfilled trenches.
d) Hydrotesting & Disinfection Works
e) Interconnection Works & Installation of Fire Hydrant
f) Tapping Works
g) Restoration of all excavated areas.
h) Acceptance testing of pipework.

1.2 Interpretation, Definitions and Abbreviations

Unless specifically stated otherwise, Installation of 100mm ØHDPE Pipe includes all functions described in this Standard Technical Specification and the provision of any minor materials or services which are not described but are reasonably necessary to provide an excellent flow of water and to prevent leaks and very low pressure.

For the purposes of this Standard Technical Specification, except where the context requires otherwise:

1.2.1 Owner

The word “Owner” refers to the Water District named in the Contract Documents.

1.2.2. Administration

The word “Administration” or “TanWD” refers to the “Tanay Water District”, the duly authorized for the proper implementation of the Contract, acting either indirectly, directly or through its properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

1.2.3 Engineer

The word “Engineer” refers to the individual or firm authorized by the Owner to oversee the execution of this Contract, acting either indirectly, directly or through its properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

1.2.4 Contractor

The word “Contractor” refers to the party entering into the Contract for the performance of the work required, its legal representative and/or its duly appointed agent.

1.2.5 Subcontractor

The word “Subcontractor” refers to any person, firm, or corporation entering into agreement with the Contractor for the performance of any part of the Contractor’s obligation under the Contract.

1.2.6 Contract

The word “Contract” refers to the Contract Documents and shall include the Basic Contract entered into by the Owner and the Contractor for the performance of the work described in the Specifications and shown on the Drawings, together with the Invitation for Bids, Information for Bidders, Specifications, the Drawings, all addenda issued by TanWD with respect to the foregoing prior to the opening of bids and all change orders issued by the Owner and signed by the Contractor pertaining to the contract after the same has been awarded.

1.2.7 Specifications

The word “Specifications” refers to the General Conditions, Special Provisions and the Standard Technical Specifications of the Contract, together with all addenda and change orders issued with respect thereto.

1.2.8 Drawings

The word “Drawings” or “Contract Drawings” refers to those drawings accompanying the Specifications and subsequently approved drawings, which show the location, nature, extent, and form of the work, together with applicable detail.

1.2.9 Work

The word “Work” refers to the labor, materials, equipment, transportation and all incidental costs necessary to complete the Contract.

1.2.10 Site

The word “Site” refers to the lands and other places on, under, in or through which the work is to be executed or carried out and any other lands or places provided by the Owner for the purpose of the Contract together with such other places as may be specifically designated in the Contract as forming part of the site.

1.2.11 Approval

The word "Approval" refers to the concurrence in writing, including subsequent written confirmation of previous verbal approval.

1.2.12 Working/ Calendar Day

The term "Working Day" refers to working days in the government service. The term "Calendar Day"' refers to the days in a week, including Saturdays, Sundays and holidays. Whenever the word "day" is used, it shall refer to calendar day.

1.2.13 Abbreviations

Whenever the following abbreviations are used, they shall have the meanings indicated:

ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association, Inc.
DPWH	Department of Public Works and Highways
LWUA	Local Water Utilities Administration
TanWD	Tanay Water District

1.3 Specifications, Drawings and Discrepancies

a) The intent of these Specifications and Drawings is that the Contractor shall furnish all the required plant, labor, materials, equipment and services, unless otherwise specifically provided.

b) These Specifications and Drawings are complementary and what is called for in one shall be as binding as is called for in both.

c) Any discrepancies, errors, or omissions found in these Specifications or Drawings shall be reported in writing within five (5) days from discovery to the Engineer who will issue the correction in writing within the same period. The Contractor shall not take advantage of any such discrepancies, errors or omissions, but shall comply with any corrective measures regarding the same prescribed by the Engineer.

1.3.1 Shop Drawings

a) Whenever called for in these Specifications or on the Drawings, or where required by the Engineer, the Contractor shall furnish TanWD for review four (4) prints of each shop drawing. The term "shop drawing" as used herein shall be understood to include detail design calculations, fabrications and installations drawings, lists, graphs, operating instructions, etc. Shop drawings shall be submitted to TanWD for review/approval within ten (10) days from receipt of the Notice of Award, unless otherwise extended in writing by TanWD.

b) All shop drawing submittals shall be accompanied by a transmittal form. Any shop drawing submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for re-submittal. The Contractor may authorize a material or equipment supplier to deal directly with TanWD with regard to shop drawings; however, ultimate responsibility for the accuracy and completeness of the information contained in the submittal shall remain with the Contractor.

c) Within seven (7) calendar days after the receipt of said prints, TanWD will return prints of each drawing to the Contractor with his comments noted thereon. Whenever a resubmittal is required, the Contractor shall make a complete and acceptable submittal to TanWD within seven (7) days from receipt of the returned shop drawings. Non-compliance hereof will give rise to the Administration's right to either: (a) cancel the award; or (b) withhold the money due the Contractor to cover additional costs of the Engineer’s review beyond the second submission. Such failure may be considered a factor against Contractor's competence in future biddings to be conducted by the Administration.

d) If two (2) prints of the drawings are returned to the Contractor marked "APPROVED", formal revision of said drawings will not be required.

e) If two (2) prints of the drawings are returned to the Contractor marked "APPROVED WITH COMMENTS ", formal revision of said drawings will not be required.

f) If one (1) print of the drawings is returned to the Contractor marked "NOT APPROVED", the Contractor shall revise the said drawings and shall resubmit four (4) copies of said revised drawings to TanWD.

g) Fabrication of an item shall not be commenced before TanWD has reviewed/examined the pertinent shop drawings and returned copies to the Supplier marked either "APPROVED" or "APPROVED WITH COMMENTS". Revisions indicated on shop drawings shall be considered as changes necessary to meet the requirements of the Contract Drawings and Specifications and shall not be taken as the basis of claims for extra work. The Contractor shall have no claim for damages or extension of time due to any delay resulting from the Contractor having to make required revisions to shop drawings (unless reviewed by TanWD of said drawings is delayed beyond a reasonable period of time and unless the Contractor can establish that TanWD's delay in review actually resulted to a delay in the Contractor's Construction Schedule). The review of said drawings by TanWD will be limited to checking for general agreement with the specifications and drawings, and shall in no way relieve the Contractor of the responsibility for errors or omissions contained therein nor shall review operate to waive or modify any provision contained in the Specifications or Contract Drawings. Fabricating dimensions, quantities of material, applicable code requirements shall be the Contractor's responsibility.

1.3.2 Catalog Data

a) For original submittal and each subsequent resubmittal required, submit 3 copies of catalog data.

b) Manufacturer's Catalog, Product, and Equipment Data: Certified and include material type, performance characteristics and similar data.

b.1 Indicate catalog, model, and serial numbers representing specified equipment.

b.2 Submit complete component information to verify specified required items.

1.3.3 Method of Construction

a) For original submittal and each subsequent resubmittal required, submit 3 copies of data detailing method of construction.

b) When Water District specifies or directs, submit proposed method of construction for specific portions of Work.

b.1 Include detailed written description of phases of construction operation to fully explain to Water District proposed method of construction.

b.2 If required by Specifications, submit working drawings to supplement description.

c) Review will follow the process herein and shall not relieve the Water District from responsibility for fulfillment of the requirements of the Contract Documents. Contractor assumes risks associated with proposed method.

After review, submit requests for modifications in detail, including justification for them. Do not implement modifications prior to the Water District's review.

1.3.5 Reference to Standard or Publications

Any reference in the Specifications or Drawings to any specification, standard or publication of any organization shall, in the absence of a specific designation to the contrary, be understood to refer to the latest edition of the specification, standard or publication in effect as of the date of advertising the work. Internationally accepted standards equal to or better than specified standards or specifications are acceptable.

2. REFERENCED DOCUMENTS

2.1 Local Water Utilities Administration Standard Drawings

The Local Water Utilities Administration standard drawings are deemed to form part of this Standard Technical Specification.

G-7	Below Ground Culvert Crossing Details
G-8	Typical Trench Detail, Horizontal Concrete Thrust Blocks, Typical Concrete Thrust Blocks, Concrete Anchor Block and Double Trench in Paved Roads
G-9	Service Connection Details, Valves and Fire Hydrant Details
G-10	Typical Sections of Grouted Riprap, Retaining Wall, Gabion/Mattress Embankment Protection and Access Road

3. GENERAL CONSTRUCTION

3.1 General

Install 100mm (4in) Ø HDPE pipeline and re-tap the water service connections with the lines, locations and using the materials shown on the Drawings and in the Specification and to the details shown on the relevant Tanay Water District Standard drawings listed in clause 1.3.

3.2 Order of Construction

Undertake and complete all work including fittings before connection is made to the existing water supply system.

4. SELECTED SUBCONTRACTORS

4.1 Works

The Contract includes the following Selected Subcontract work:

Selected Subcontract No 1 Supply and install HDPE pipe, Hydrant and fittings.

Selected Subcontract No 2 Civil works.

4.2 Subcontractors / Suppliers

Select subcontractors / suppliers from Local Water Utilities Administration preferred lists which can be accessed on their website at www. lwua.gov.ph.

5. TECHNICAL SPECIFICATION OF MATERIALS

5.1 General

Obtain all materials necessary for construction of the Works from approved sources. Comply with all recommendations of the manufacturers regarding the storage and handling of the materials. Undertake all handling, transport and storage such that no damage occurs to the materials including coatings and linings.

Any damaged material is liable to be rejected. Do not use any rejected material in the Works and remove it from the Site at the earliest opportunity.

5.2 On-Site Stockpiles

Only store sufficient materials on site as are necessary to allow timely and efficient progress of the work. Locate stockpiles of excavated or imported material where they cause no interference to the public, drainage routes or vehicular or pedestrian traffic. Clear lines of sight for drivers must not be obstructed. Do not stack materials against structures, fences, trees or other property improvements. Leave a clear path at least 600 mm wide between the edge of any excavation and the inner toe of any stockpile.

5.3 Earthwork

5.3.1 General

The Contractor shall perform all earthworks required and shown on the drawings.

5.3.2 Excavation

a. Keep the extent of excavation to the minimum possible to allow efficient construction of the Works while meeting the minimum requirements shown on the Drawings and the relevant Standard Drawings.

b. Keep pipe trench within the maximum width equal to the outside diameter of the pipe plus 600mm (24in) except when otherwise shown or ordered by the Engineer.

c. Do not commence any excavation until all materials necessary to make the excavation safe are on site and available for use. This includes any necessary fencing and barriers as well as excavation support systems.

d. Remove and dispose all excess excavated material at his own expense in a place and a manner approved by the Engineer.

5.3.3 Backfill

a. Backfill shall not be dropped directly upon any structure or pipe. Materials used for backfill shall be selected material, free from grass, roots, brush, or other vegetation, or rocks having maximum dimension larger than 150 mm (6 in.). Material placed within 150mm (6 in.) of any structure or pipe shall be free from rocks or unbroken masses or earthly materials having maximum dimension larger than 75 mm (3 in.).

5.3.4 Granular Bedding

a. General

This work shall consist of furnishing, spreading and compacting graded granular base material in all trenches, slab on fill, column and wall footing and roadways in accordance with the Specification and Drawings.

b. Material Requirement

Material for granular bedding shall consist of natural or processed aggregates such as gravel sand or stone fragments. It shall be clean and free from organic matters, lumps of clay and other deleterious substances. The material shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base.

5.3.5 Compaction

a. Compact fill material by manual or mechanical tampers. Flooding of the fill is not permitted.

b. Place and compact backfill in even layers on either side of structures to avoid differential loading.

c. Keep all dewatering systems operating during backfilling so that no fill material is placed or compacted under water. At all times ensure that the pipelines and structures are not damaged or moved during placement and compaction of fill.

5.4 Concrete Works

5.4.1 Materials

a. Cement

Cement shall conform with the “Standard Specification for Portland Cement” (ASTM C-150) and shall be Type I.

b. Concrete Aggregates

1. Concrete Aggregates shall be well graded, clean, hard particles of gravel or crushed rock conforming with the “Standard Specifications for Concrete Aggregates” ASTM C-33.

2. Use ¾” size of aggregates for reinforced concrete.

c. Water

Water used in mixing concrete shall be clean and free from injurious amounts of oils, acids, alkali, organic materials, or other substances that may be deleterious to concrete or steel.

d. Reinforcing Steel

All reinforcing steel bars used shall be of deformed type, new, free from rust, oil, defects, greases or kinks and with a minimum grade equal to 275 MPa unless otherwise shown on the plans.

5.4.2 Concrete Proportion and Mixing

a. The minimum cement content for 20.68MPa (3000 psi) concrete shall be 8.39 sacks per cubic meter of concrete (Class A) see Table 1-1.

b.

TABLE 1-1 Concrete Proportion

Mixture Class	Proportion	Cement (40 kg.)	Sand (m^3)	Gravel (m^3)
AA	1 : 1 ½ : 3	12.0	0.50	1.00
A	1 : 2 : 4	9.0	0.50	1.00
B	1 : 2 ½ : 5	7.5	0.50	1.00
C	1 : 3 : 6	6.0	0.50	1.00

c. No hand mixing shall be allowed, except in emergency such as mixer breakdown during concreting operations and this shall stop as shown as soon as the pour is completed. All concrete shall be machine mixed for at least one and one-half (1 ½) minutes after all materials, including water, are in the mixing drum.

5.4.3 Preparation of Surfaces for Concreting

a. Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud and debris at the time of placing concrete.

b. When the placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work, provided that construction joints shall be made only where approved by the Engineer.

5.4.4 Placing Concrete

a. Concrete which upon or before placing is found not to conform with the requirements specified herein shall be rejected and immediately removed from the work. Concrete which is not placed in accordance with these specifications, or which is of inferior quality, as determined by the Engineer, shall be removed and replaced by and the expense of the Contractor.

b. Placing of concrete with a free drop or fall more than 1.20 meters (4 ft) shall not be allowed, except when approved by the Engineer and when approved sheet metal conduits or pipes.

5.5 Piping

5.5.1 General

a. The Contractor shall furnish and install all pipes, 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. Shop drawings of all piping systems shall be furnished in accordance with Section 1.3.

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

5.5.2 High-Density Polyethylene (HDPE) Pipe

a. Materials

The extrusion compound shall be PE 3408.

All compounds used shall be virgin plastic except that clean rework material from the manufacturer's own tubing production may be used so long as the original was virgin material. The pipe shall meet the requirements of the National Sanitation foundation (NSF) for potable water use as tested by (he National Science and Technology or other approved testing laboratories and shall be made from non-toxic, non-less based plasticizer approved by the Engineer.

b. Dimension

SDR 11, Pressure rating of 160 psi

NOMINAL DIAMETER	OUTSIDE DIAMETER	MINIMUM WALL THICKNESS
(mm)	(mm)	(mm)
75	90	8.18
100	110	10
150	160	14.55
200	225	20.45

c. Rating

All service tubing shall be rated for use with water at 23.0°C (73.40°?) and at a minimum working pressure of 1.1 MPa (160 psi). Other requirements shall be in accordance with ASTM D2737.

d. Testing

Inspection and testing shall be conducted by the manufacturer in accordance with ASTN4 U1248 and D2737 as follows:

- Sustained pressure test based on fiber stress of 9.10 MPa for PE3306 and 11.0 Ml'a for PB 3408 at 23°C.
- Minimum burst pressure test based on fiber stress of 17.4 MPa at 23°C.

e. Burst Pressure Requirement

The minimum burst pressure requirement for polyethylene pipe when supplied under these specifications shall be 4.3 MPa (650 psi) when determined in accordance with ASTM D1599.

The time of testing of each specimen shall be between 60 and 70 seconds.

Other requirements with respect to workmanship, mechanical properties and testing shall be in accordance with ASTM D2339.

f. Markings

All tubing shall be clearly marked at intervals of not more than 0.6 m with nominal size, type of materials (PE 3306. PE 3406 or PE 3408), Standard Dimension Ratio (SDR 9 or SDR 11) manufacturer's trade name and production code, and the seal of approval from an accredited testing laboratory.

g. Installation

All PE pipes when supplied under these specifications shall be joined by the following methods:

1. Butt-Fusion

When the pipes supplied under these specifications are installed and joined by this method, the work shall be carried out only by well-qualified personnel who adhere strictly to prescribed working conditions, using tools and procedures recommended by the manufacturer and approved by the Engineer.

a. Equipment - The equipment needed shall be as described in ASTMD2657.

b. General Procedure - The following procedure shall be followed when making a butt-fusion joint:

1. Wipe each pipe-end, inside and out to remove dirt, water, grease, and other foreign material.

2. Square the end of each pipe section to be fused using a facing tool. Remove cuttings and burrs from pipe ends.

3. Check line-up of pipe-ends in fusion machine to see that pipe ends meet squarely and completely over the entire surface to be fused. Two clamps should be used on each end of pipe to be fused for sizes 100 mm and above.

4. Insert the heater plate between the aligned pipe ends. Bring and hold the pipe ends in contact with the heater plate. Maintain contact and allow pipe to heat and soften until a bead of molten plastic roots back from the ends. This bead will be about 1.5 mm to 5.0 mm back from the end of the pipe depending on size. Soften approximately 1.5 mm on all sizes up to 75 mm. On 75 mm to 150 mm heat to 3 mm. Softening can be judged by the appearance of the pipe end as the material softens.

   Both surfaces of the heater plate shall be clean and the temperature maintained at 246"C-260"C (475"F to 500°F).

5. Carefully move the pipe ends away from the heater plate and remove the plate. If the softened material sticks to the heater plate, discontinue the joint. Clean heater plate, re-square pipe ends and start over.

6. Bring the heated pipe ends together with the specified pressure to form a uniform double bead about 3 mm to 5 mm wide around the entire circumference of the pipe.

7. Allow the joint to cool and solidify while maintaining the pressure for the specified time. Inspect the joint for a uniform nonporous appearance. If the joint appeared faulty, cut the joint out and repeat the procedure.

h. Pressure and Leakage Testing and Disinfection

General

The Contractor shall furnish all equipment, labor and materials, including taps, valves and bulkheads as required and exclusive of water and water meter for testing and proper disinfection of the pipelines and steel reservoir. The water and any water meter used for testing shall be furnished by the Owner, but the Contractor shall provide the facilities necessary to convey the water from the Owner-designated source to the points of use. All testing and chlorinating operations shall be done in the presence of the Engineer.

1. Pipeline Testing

All pipelines shall be thoroughly flushed out with water prior to testing. The Contractor shall test the pipeline in sections prior to permanent resurfacing after the trench is backfilled, but with joints exposed for examination except in heavily traveled roadways. Maximum length of test sections shall be 500 meters for distribution mains and 1.000 meters for transmission mains unless otherwise approved by the Engineer. Where test sections are approved which exceed the above maximum lengths, the allowable leakage for the lengths in excess of the

maximum allowable shall be reduced by fifty percent (50%). The pipeline shall not be filled with water until the following curing periods have elapsed.

The pipeline shall be prepared for testing by closing valves when available, or by placing temporary bulkheads in the pipe and filling the line slowly with water. During the filling of die pipe and before the application of the specified test pressure, all air shall be expelled from the pipeline. To accomplish this, taps shall be made, if necessary, at points of highest elevation and after completion of the test, and taps shall be tightly plugged unless otherwise specified. After the line or section thereof has been completely filled, it shall be allowed to stand under a slight pressure for a minimum of forty eight (48) hours to allow the escape of air from any air pockets and to allow the pipe or mortar lining to absorb as much water as possible.

During this period, all exposed pipes, fittings, valves, joints and couplings shall be examined for leaks. I f found to be cracked or defective, they shall be removed and replaced by the Contractor with sound material at his own expense. The pipeline shall then be refilled and all bulkheads, joints and connections shall be examined for leaks. If any are found, these shall be stopped. The test shall consist of holding the test pressure on each section of the line for a period of two (2) hours. The lest pressure at the lowest point shall be 690 KPa or 1.0 MPa according to the class of pipe installed, class 100 or class L50, and as approved by the Engineer, pressure gauges shall also be provided at all ends of the section tested. The water necessary to maintain the pressure shall be measured through a meter or by other means satisfactory to the Engineer. The leakage shall be considered the amount of water entering the pipeline during the lwo-hour test period. The allowable leakage for cast iron pipe or ductile pipe shall not exceed the values listed in Table 3 of the AVVWA Standard for Installation of Cast Iron Water Main (AWWA C600). All other types of pipes shall have an allowable leakage not exceeding 1.85 L/mm/ (20 gal/in.) of diameter of' pipe per kilometer (mile) per day. Should any test of a section of pipeline disclose joint leakage greater than that permitted, the Contractor shall, at his own expense, locate and repair or replace the defective pipe, fitting, joint, coupling or other appurtenance. The test shall be repeated until the leakage is within the permitted allowance.

Closure pieces between newly installed and existing mains shall be tested after the pipe has passed the pressure and leakage lest specified above. The test shall include subjecting the joint to a pressure of 345 Pa (50 psi) for a period of five (5) minutes and visually checking for leakage. All visible leaks shall be repaired by the Contractor at no expense to the Owner.

2. Pipeline Disinfecting

Before being placed in service, and before certification of completion by the Engineer, all new domestic water mains or extension to existing systems, or valved section of such extension or any replacement in the existing water system shall be disinfected with chlorine in accordance with AWWA Standard C601 "Standard for Disinfecting Water Mains".

Disinfection shall be completed not more than three (3) days prior to placing the pipeline into service unless otherwise approved by the Engineer and care shall be

taken to prevent recontamination of the pipeline. A bacteriological test shall be taken, at the expense of the owner, prior to acceptance of the pipeline disinfected.

The amount and concentration of chlorine solution applied shall be such as to provide a dosage of not more than fifty milligrams per liter {50 mg/L) and shall be introduced into the lines as directed by the Engineer. After a contact period of twenty-four hours, the chlorine residual of samples taken at service connections or sampling points along the entire length of the pipelines shall not be less than twenty-five milligrams per liter (25 mg/L) as determined by the Engineer. The systems shall then be flushed with clear water until the residual chlorine is not greater than 0.75 mg/l but not less than 0.20 mg/L. All valves and appurtenances in the pipeline being disinfected shall be operated several times during the chlorine contact periods.

The preferred point of application of the chlorinating agent is at the beginning of the pipeline extension or any valved section and through a corporation stop inserted on the top of the laid pipes.

Should the initial treatment fail to result in the conditions stipulated above, the chlorination procedures should be repeated until satisfactory results are obtained.

Where connections are to be made to existing water mains, HTH shall be added at points of interconnections as directed by the Engineer.

5.5.3 PE *(Polyethylene)* Plastic Tubing

a. Materials

The extrusion compound shall either be Grade 33, Class C, or Grade 34, Class C (PE 3306 or PE 3406) as defined by ASTM D1248 or polyethylene pipe extrusion compound PE 3408 according to the Plastic Pipe Institute (PPI) with hydrostatic design stressor5.5 MPa (800psi).

All compounds used shall be virgin plastic except that clean rework material from the manufacturer's own tubing production may be used so long as the original was virgin material. The pipe shall meet the requirements of the National Sanitation foundation (NSF) for potable water use as tested by (he National Science and Technology or other approved testing laboratories and shall be made from non-toxic, non-less based plasticizer approved by the Engineer.

b. Dimensions

Polyethylene tubing shall conform with either of the following dimensions depending on the type of extrusion compound used as stipulated above:

1. Extrusion Compound PE 3306 and PE 3406 (SDR 9)

Nominal Pipe Size		Outside Diameter	Min.Wall Thickness	Tolerance (t)
(mm)	(in.)	(mm)	(mm)	(mm)
20	½	20	2.3	0.5
25	¾	25	2.8	0.5

32	1	32	3.6	0.6
50	1-½	50	5.6	0.8

2. Extrusion Compound PE 3408 (SDR 11)

Nominal Size		Outside Diameter	Min. Wall Thickness	Tolerance (t)
(mm)	(in.)	(mm)	(mm)	(mm)
20	½	20	1.9	0.3
25	¾	25	2.3	0.5
32	1	32	2.9	0.6
50	1-½	50	4.6	0.7

c. Rating

All service tubing shall be rated for use with water at 23.0°C (73.40°?) and at a minimum working pressure of 1.1 MPa (160 psi). Other requirements shall be in accordance with ASTM D2737.

d. Marking

All tubing shall be clearly marked at intervals of not more than 0.6 m with nominal size, type of materials (PE 3306. PE 3406 or PE 3408), Standard Dimension Ratio (SDR 9 or SDR 11) manufacturer's trade name and production code, and the seal of approval from an accredited testing laboratory.

e. Testing

Inspection and testing shall be conducted by the manufacturer in accordance with ASTN4 U1248 and D2737 as follows:

- Sustained pressure test based on fiber stress of 9.10 MPa for PE3306 and 11.0 Ml'a for PB 3408 at 23°C.
- Minimum burst pressure test based on fiber stress of 17.4 MPa at 23°C.

f. Installation

The installation and method of end connections of PE plastic tubing shall be compression type as shown on the Drawings and as specified in Section 23.11. All procedures and tools used shall comply with the recommendations of the manufacturer and be approved by the Engineer.

5.5.4 Service Line

a. Materials

The service line piping 50 mm (2 in.) and smaller shall be made of polyethylene tubing as specified herein and in the sizes shown on the Drawings. Service piping have diameter larger than 50 mm. (2 in.) shall be constructed of the same materials approved for water mains of similar sizes.

Small tubing-size service line shall-have, plastic or brass fittings as shown on the Drawing, using compression type connection and stainless steel inserts as shown.

Plastic fittings shall be injection-molded, compression type and suitable for use with Polyethylene (PE) tubing conforming in dimensions and tolerances to ISO 3607.

Plastic service connection fittings shall be molded from Acrylonitrile-Butadine-Syrene (ABS), Polypropylene (PP), Polyvinyl Chloride (PVC), Polyethylene (PB). or other suitable materials. The compounds used in the manufacture of plastic fittings shall be virgin and shall be made from non-toxic materials and shall be certified as suitable for potable water by the Food and Drugs Administration (FDA) or any accredited testing laboratories.

All plastic fittings shall meet the requirements of the National Testing Laboratories for Potable Water and shall be designed to hold a working pressure of l . l MPa and resist a minimum pull-out force of 20 kg.

Brass service connection fittings shall be manufactured according to AWWA Standard C-800 "Threads for Underground Service Line Fittings" and shall be similar in quality to those manufactured by Mueller Co., Decatur, IM, U.S.A., or Ford Meter Box Company. Inc., Wabush, Indiana, U.S.A.

The fittings shall be clearly and neatly finished and free from burrs or other defects likely to damage or scour the pipe, and the bore shall be free from irregularities, which restrict the free flow of fluid. The internal and external surfaces of fittings shall be clean and free from grooves, pinholes, or other defects likely to affect the performance and service of the system.

The fittings shall be designated by the sizes of the connecting pipes/tubing.

b. Testing and Acceptance

Inspection and testing of plastic fittings shall be done by the manufacturer in accordance with ASTM 2146; D1598 and L)1598 for PP, ASTM 2581 and D2666 for PB, ASTM D2239 for Pb, AWWA C900 for PVC as fitting materials. For materials other than those mentioned, manufacturer shall provide the specific existing ASTM, AWWA, ISO, PSA or other internationally accepted standards used to identify procedures by which lest can be conducted and results can be evaluated.

All plastic fittings shall be free of cracks or other injurious defects and shall be smooth and clean before inspection.

For every 100 pieces of any size of fittings, at least three pieces shall be chosen at random and subjected to a pressure of 1.1 MPa at 23°C. If any sample tested cracks or leaks, the lot represented will be rejected.

c. Installation

All workmanship shall be in accordance with the manufacturer's recommendations and approved by the Engineer. Service taps for plastic service lines shall be made between 45 degrees from the top of the pipe, and the tubing shall be laid in a serpentine fashion along the service trench bottom to resist pull-out.

Where service lines are located under the roadbeds or in stony or rocky ground, sand bedding shall be provided. The sand bedding shall be of adequate thickness or provide a depth of cover of 0.15m.

Unless otherwise directed, all service lines shall be installed prior to the hydrostatic test of the water main, and they shall be tested with pressure test of the water main. Each stopcock valve shall be operated to thoroughly flush the service and remove any accumulated air present prior to the hydrostatic test.

5.5.5 Service Saddle

a. Material

Where saddles arc required as shown on the Drawings, they shall be constructed of one or a combination of the following materials and complying with the requirements as hereunder indicated.

Cast Iron

b. Manufacture

Service saddles shall be supplied either with:

1. Clamp or single strap of at least 50 mm (2 in.) wide, bolted on each side, or bolted one side and hinged on other side. Bolts and nuts shall be 18-8 stainless steel, brass or bronze as specified above.

2. Double or single strap, as shown on the Drawings, each with width not less than 20 mm (¾ in).

3. Strap or clamps shall be made of any of the materials listed above or of 18-8 stainless steel.

All parts of the service saddle including the clamp or strap shall comply with the following minimum thickness requirements:

Pipe Nominal Diameter	Thickness
50 mm	8 mm
100 mm	8 mm
150 mm	10 mm
200 mm	12 mm
250 mm	15 mm
300 mm	15 mm

Saddles shall be shaped to the various outside pipe diameter to which they are to be fitted and shall be provided with an approved resilient neoprene rubber gasket with a minimum bearing width of 12 mm (!/2 in.). The tapping thread shall be at least 30 mm deep and drilled in accordance with iron pipe (I.P.) thread dimensions.

5.6 Valves

5.6.1 General

a. The Contractor shall furnish and install all valves as specified herein and as shown on the Drawings. All valves shall be new and of current manufacture.

b. Flanged valves may be plain faced with serrated gasket surface or raised. Flanges of valves for water working pressure of 1.2 MPa (175 psi) or less shall be faced and drilled to 125-lb American Standard dimensions; flanges of valves for water working pressures greater than 1.2 MPa (175 psi) shall be faced and drilled to 250-lb American Standard dimensions.

c. Each valve body shall be tested under the test pressure equal to twice its design water working pressure.

5.6.2 Gate Valves

a. Valves

This section applies to gate valves 50 mm (2 in.) through 400 mm (16 in.) in size. All valves shall conform with the following standards; "Standard for Resilient Seated Gate Valves" (AWWA C509) and "Standard for Metal Seated Gate Valves" (AWWA C500). Gate Valves shall be cast iron bodied, with resilient seats applied to the body or gate for resilient, or for metal discs shall be cast iron with bronze disc rings, and the seat ring shall be bronze and replaceable. The, valve shall be non-rising stem with a minimum of two "o" ring seals (at least one above the stem collar), or rising stem when shown on the Drawings. The valves shall have a 50 mm (2 in.) square operating nut with a cast arrow showing direction in which the nut is to be turned to open tire valve. Valves shall be constructed to permit the replacement of the "O" rings above the stem collar under full working water pressure with the valves in the full open position.

b. Testing Requirements

1. Operation Test

Each valve shall be operated in the position for which it was designed to ensure free and perfect functioning of all parts in the intended manner. Any defects of workmanship shall be corrected and the test repeated until satisfactory performance is demonstrated.

2. Shell Test

A hydrostatic test pressure equal to twice the rated working pressure of the valve shall be applied to the body with the gate in the open position. The test shall show no leakage through the metal, flanged joints, or stem seals.

3. Seal Test

A test shall be made at rated working pressure to prove the sealing ability of each valve from both directions of flow. The test shall show no leakage through the metal, pressure containing joints, or past the seat.

4. Hydrostatic Test

One prototype valve of each size and class of a manufacturer's design shall be hydrostatically tested with twice the specified rated pressure applied to one side of the gate and zero pressure on the other side. The test is to be made in each direction across the gate. Under this hydrostatic test, the manufacturer may make special provisions to prevent leakage past the seats. No part of the valve or gale shall be permanently deformed by the test.

5. Torque Test

A prototype of each size should be overtorqued in the closed and open positions to demonstrate no distortion of the valve stem or damage to the resilient seal as evidenced by failure to seal at rated pressure. The applied torque shall be 250 ft-lb for 3 and 4 NRS valves, and 350 ft-lb for 6, 8, 10 and 12 NRS valves (1.0 ft-lb = 0.736 Newton-meter = 0.66 kg-m).

5.7 Surface Restoration and Paving

5.7.1 General

The Contractor shall furnish all materials, labor, plant, and equipment for the removal of all pavement, sidewalks, curbs and gutters, fences, poles, driveways, walks, other property, and surface structures that are necessary for the proper prosecution of the work, but only upon approval of the parties having jurisdiction thereof and of the Engineer. Unless otherwise shown, the Contractor shall restore at his own expense all properly removed or destroyed by his operation at least actual to conditions prior to work under this Contract or to the satisfaction of the property owner.

5.7.2 Removal of Existing Pavement

a. In cutting or breaking up street surfacing required for the performance of the work, the Contractor shall not use equipment which will damage the adjacent pavement. All concrete pavement surface to be removed shall be scored with concrete: sawing equipment; provided, that any portland cement concrete based under an asphaltic mix surface will not be required to be scored by sawing. Asphaltic concrete pavement shall be removed to clean straight lines.

The Contractor shall remove the pavement and road surfaces as part of the trench excavation, and the amount removed shall not exceed the maximum width of trench for pipelines as indicated on the Drawings, unless otherwise ordered in writing by the Engineer.

The width and length of the pavement area requires to be removed for the installation of valves, valve chambers, spirals, or other structures shall not exceed the maximum linear dimensions of such structures by more than 0.30 meter on each side.

The width of the pavement area required to be remove for the installation of service connections shall not exceed the maximum width as shown on the Drawings.

b. Concrete sidewalks, curbs and gutters required to be removed in connection with performing the work under the Contract shall he cut to the nearest score marks and shall be replaced with the same kind or better material by the Contractor in conformance with the latest specifications, rules and regulations, and subject to the inspection and approval of the agency having jurisdiction.

5.7.3 Restoration of Damaged Surface and Property

Except where shown on the drawings or otherwise specified, any pavement, trees, shrubbery, fences, poles or other; properly and surface, structures/which have been, damaged,, removed, or, disturbed by the Contractor, whether deliberately or through failure to carry out the requirement of the Contract Documents, municipal ordinances, or the specific directions of the Engineer, or through failure to employ usual and reasonable safeguards shall be replaced or repaired at the expense of the Contractor.

5.7.4 Replacement of Disturbed Surface Structure and Private Property

Except where shown on the drawings, the Contractor shall restore all private property and surface structures removed or disturbed as a part of the work. He shall also furnish all labor and materials incidental thereto at his own expense. No payment shall be allowed for dirt road restoration.

6. PUBLIC SAFETY AND CONVENIENCE

6.1 Public Safety

Whenever the Contractor's operations create a condition hazardous to traffic or to the public, it shall furnish at its own expense such flagmen and guards as are necessary to give adequate warning to 'the public of any dangerous conditions to be encountered; and it shall furnish, erect, and maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents and avoid damage or injury to the public. Signs, flags, lights and other warning and safety devices, shall conform with the requirements set forth in the DPWH "Standard Specifications for Highways and Bridges", 1951 or its latest revision.

6.2 Public Convenience

The Contractor shall so conduct its operations as to offer the least possible obstruction and inconvenience to public traffic, and it shall have under construction no greater length or amount of work than it can prosecute properly with due regard to the rights of the public; Convenience of abutting lots along the road shall be provided for as far as practicable. Convenient access to driveways, houses, and buildings along the line of work shall be maintained and temporary approaches to crossings or intersecting roads shall be provided and kept in good condition.

Before the Contractor can create any condition hazardous to the traffic or to the public, the Contractor will submit to the Engineer at least one week in advance, its proposal for traffic deviation, public warning and lighting, safety devices and staff that will be permanently mobilized for such purposes. This proposal will be discussed and presented to the Owner and LGU for approval before implementation. These requirements even agreed upon, will not relea.se the Contractor of its responsibility in case of any accident or damage that can occur during the construction period.

6.3 Sanitary Provisions

The Contractor shall provide and maintain such sanitary accommodation for the use of its employees and those of its subcontractors as may be to comply with applicable national and local laws and ordinances, regulations, customs and practices.

6.4 Safety and Health Regulations

Contractors and subcontractors shall comply with all applicable national and local laws and ordinances, regulations, customs and practices regarding safety and health.

6.5 Securing the Work Area

Site security should consider all risks to workers and others. Establish the work activity's boundary before securing the work area. Each work activity may be smaller than the whole workplace, so as each work activity moves its boundary moves with it. As the work boundary moves, so far as is reasonably practicable, minimize risk to workers and others outside the work activity. Other people near the work have a responsibility to take reasonable care that their actions (or lack of action) do not put themselves or others at risk. They must also comply with any reasonable instruction given by the contractor, as far as they are reasonably able to.

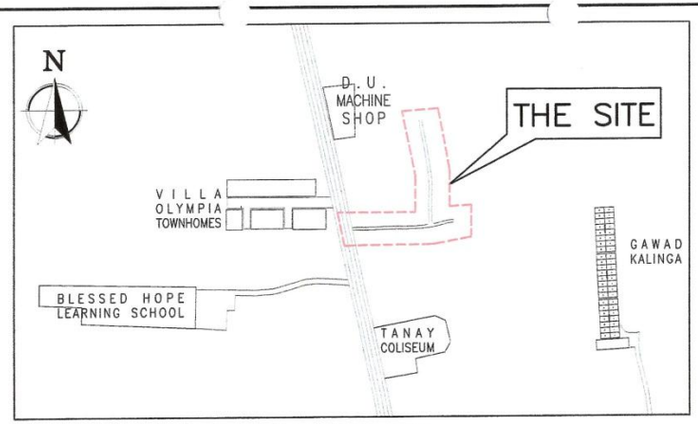
When organizing site security and site access, consider:

a) warning or hazard signs
b) supervising authorized visitors
c) the risk of unauthorized access occurring (consider schools, parks, shops or other public places, or amenities and events nearby)
d) pedestrians and other members of public
e) other workers and mobile plant on site
f) vehicle traffic control within and near the excavation
g) delivery points, including vehicle access and egress
h) immobilizing/locking vehicles
i) safe, secure and control of any construction materials from the excavation
j) suitably designed and constructed physical barriers (eg safety fences, lockable gates, or covers).

6.6 Non-Observance of Safety Provisions

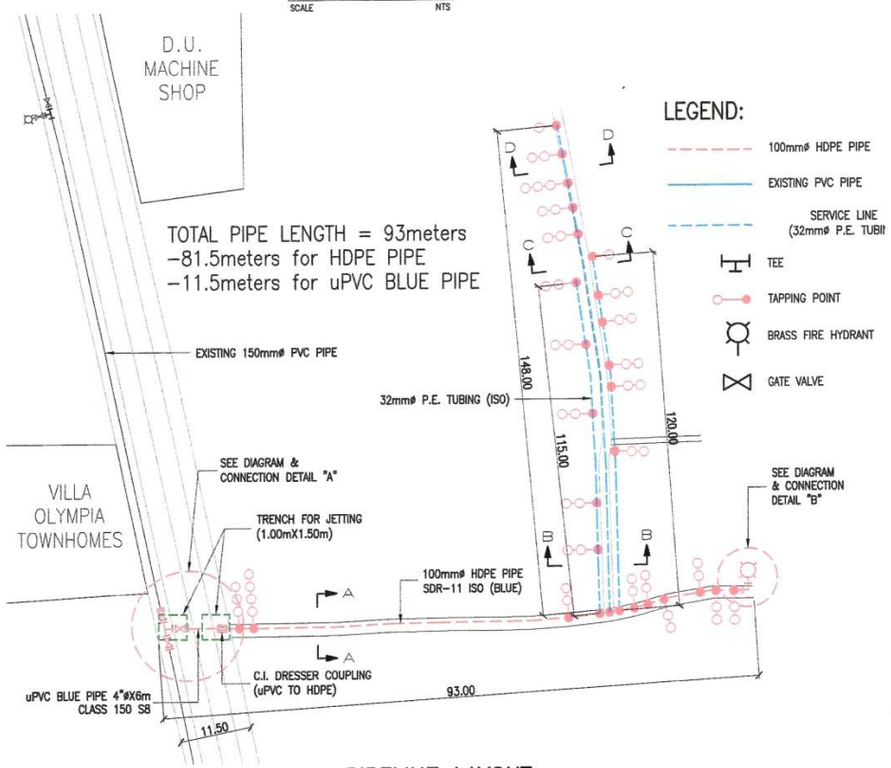
Should the Contractor fail to faithfully observe the Public Safety Provisions herein specified, the Administration may exercise such remedial rights as are provided under the Contract. The Administration may withhold one percent (1%) of the monthly progress payments due the Contractor until it makes good its contractual obligation.

Section VII. Drawings



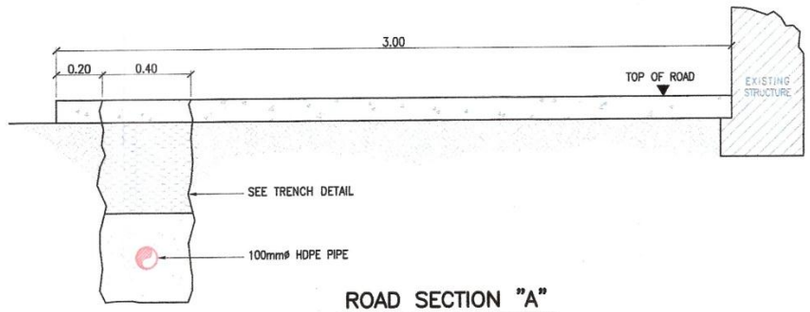
VICINITY MAP

SCALE NTS



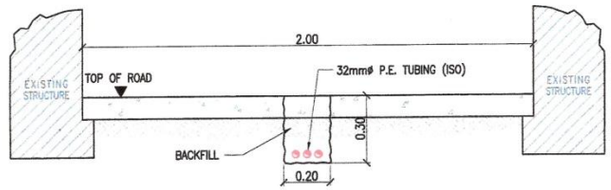
PIPELINE LAYOUT

SCALE 1 : 1000



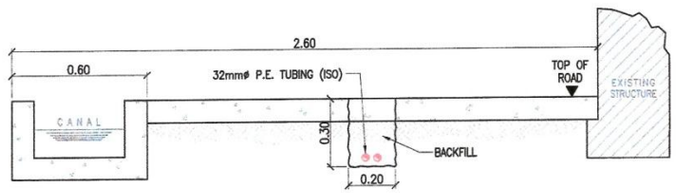
ROAD SECTION "A"

SCALE 1 : 20



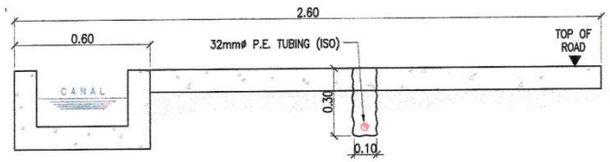
ROAD SECTION "B"

SCALE 1 : 20



ROAD SECTION "C"

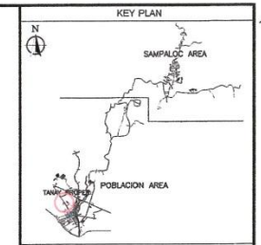
SCALE 1 : 20



ROAD SECTION "D"

SCALE 1 : 20

KEY PLAN



NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSION AND CONDITIONS AT THE SITE AND SHALL NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.

CADD BY:
ALLEN B. SACRAMENTO
AUTOCAD OPERATOR / DRAFTSMAN

PREPARED BY:
ENGR. MARVIN A. BALAGOT
SUPERVISING ENGINEER

CHECKED BY:
ENGR. JENNIE P. S. LORENZO
ENGINEERING DIVISION MANAGER

RECOMMENDED FOR APPROVAL:
ENGR. ARMANDO H. BONGAT
TECHNICAL DEPARTMENT MANAGER

APPROVED BY:
MR. EMMANUEL C. CATOLOS
GENERAL MANAGER C

REVISION

NO.	DESCRIPTION	CADD BY	PREPD BY	CKD BY	APRD BY	DATE
A	ISSUED FOR APPROVAL	ABS	MAB	JSL	AHB	ECC	JUL. 16, 2020

OWNER:
TANAY WATER DISTRICT
ITP Bldg., #1 F.T. Catelaxan St. Brgy Plaza Aldea, Tanay, Rizal
Tel. Nos. 654-4450 / 654-0033 / 654-3891

CONTRACTOR:

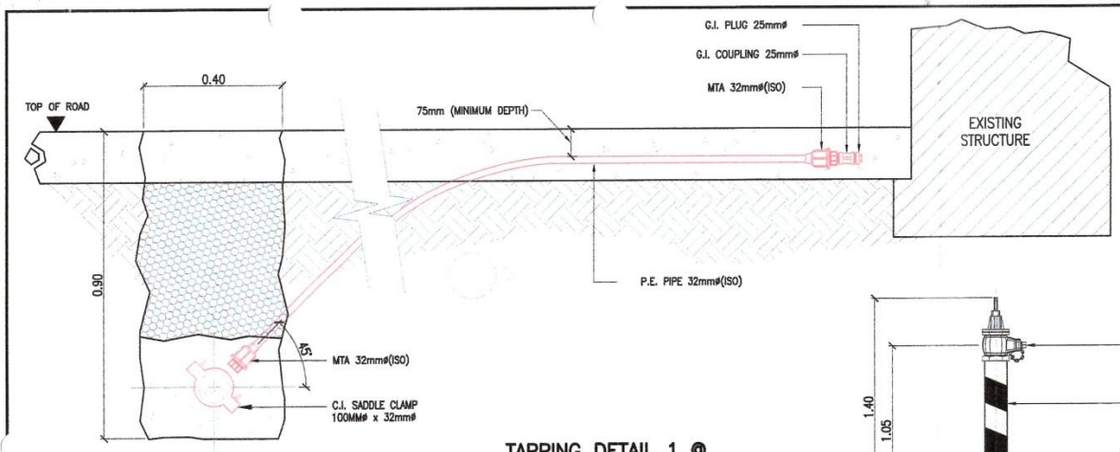
PROJECT TITLE:
CONST. / INSTALLATION OF 100mmØ & 50mmØ HDPE DISTRIBUTION LINE

DRAWING TITLE:
VICINITY MAP, PIPE LAYOUT AND ROAD SECTION

LOCATION:
Sitio Gayas, Brgy Kat Bayani, Tanay, Rizal

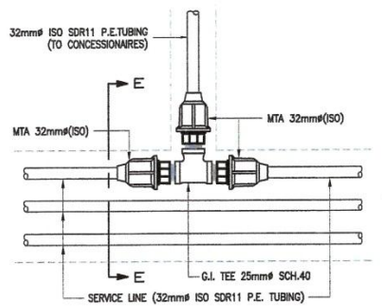
DRAWING NO.	SHEET NO.	REV. NO.
	1 OF 3	A

F:\BACKUP\Allen Files\Program of Works for 2018\Prop. Pipe laying\Sitio Gayas\Proposed Pipelaying of 100mm dia HDPE Pipe at Sitio Gayas.dwg



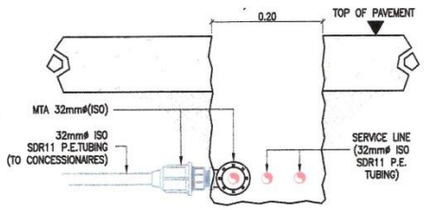
TAPPING DETAIL 1 @ 100mmø HDPE PIPE

SCALE 1 : 15



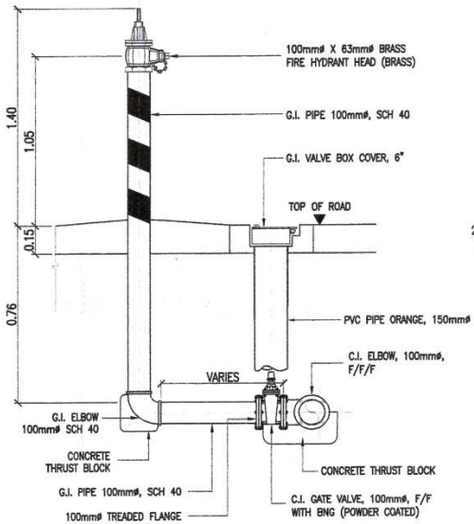
TAPPING DETAIL 2 @ 32mmø P.E. TUBING (SERVICE LINE)

SCALE 1 : 10



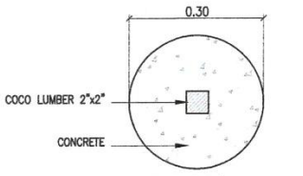
SECTION "E"

SCALE 1 : 10

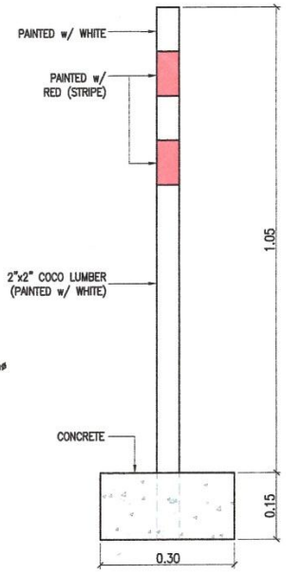


FIRE HYDRANT SECTION AND DETAILS

SCALE 1 : 20



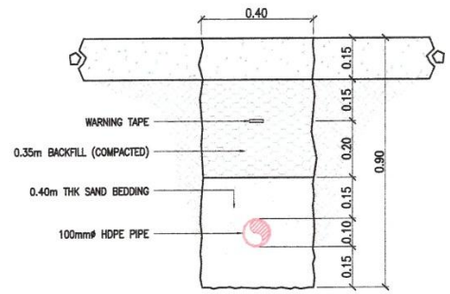
PLAN



ELEVATION

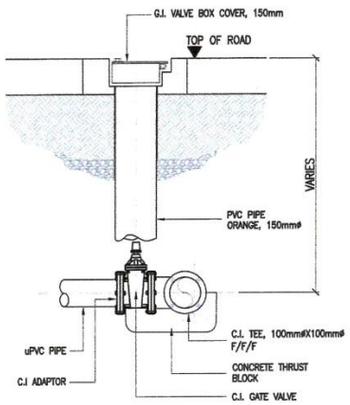
BARRICADE DETAIL

SCALE 1 : 10



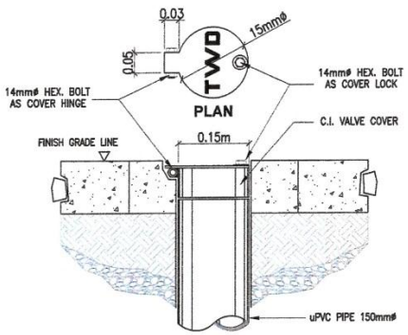
TRENCH DETAIL

SCALE 1 : 15



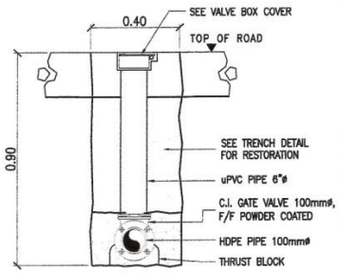
GATE VALVE DETAIL

SCALE 1 : 15



VALVE BOX COVER DETAIL

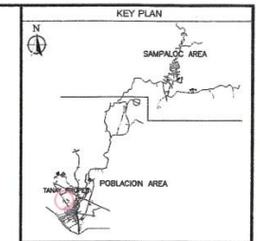
SCALE 1 : 10



LINE VALVE DETAIL

SCALE 1 : 25

KEY PLAN



NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSION AND CONDITIONS AT THE SITE AND SHALL NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.

CADD BY:
MR. ALLEN B. SACRAMENTO
AUTOCAD OPERATOR/ DRAFTSMAN

PREPARED BY:
ENGR. MARVIN A. BALAGOT
SUPERVISING ENGINEER

CHECKED BY:
ENGR. JENNET S. LORENZO
ENGINEERING DIVISION MANAGER

RECOMMENDED FOR APPROVAL:
ENGR. ARMANDO H. BONGAT
TECHNICAL DEPARTMENT MANAGER

APPROVED BY:
MR. EMMANUEL C. CATOLOS
GENERAL MANAGER C

REVISION

NO.	DESCRIPTION	CAD BY	PREPD BY	CKD BY	APRD BY	DATE
A	ISSUED FOR APPROVAL	ABS	MAB	JBL	APB	ECC JUL. 15, 2020

OWNER:
TANAY WATER DISTRICT
(PP Bldg., #1 P.T. Concepcion St. Brgy Plaza Aliwa, Tanay Rizal
Tel Nos: 654-4450 / 654-0933 / 654-3891

CONTRACTOR:

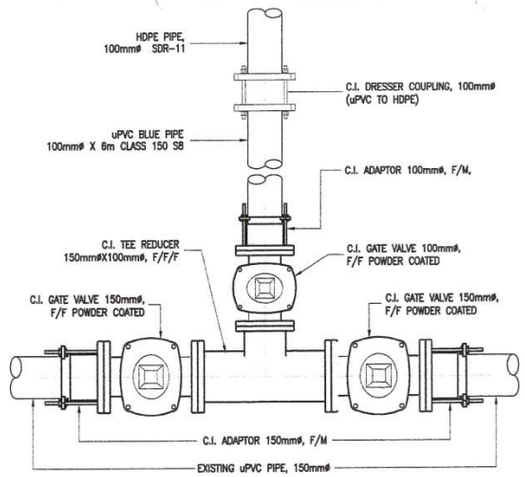
PROJECT TITLE:
CONST. / INSTALLATION OF 100mmØ & 50mmØ HDPE DISTRIBUTION LINE

DRAWING TITLE:
TAPPING, TRENCH, FIRE HYDRANT, BARRICADE & GATE VALVE DETAILS

LOCATION:
Sitio Gayas, Brgy Kat Bayani, Tanay, Rizal

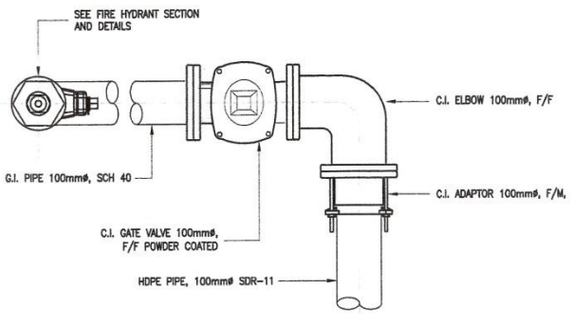
DRAWING NO.	SHEET NO.	REV. NO.
	2 OF 3	A

F:\BACKUP\Allen Files\Program of Works for 2018\Prop. Pipe laying\Sitio Gayas\Proposed Pipelaying of 100mm dia HDPE Pipe at Sitio Gayas.dwg



CONNECTION DETAIL "A"

SCALE 1 : 15



CONNECTION DETAIL "B"

SCALE 1 : 15

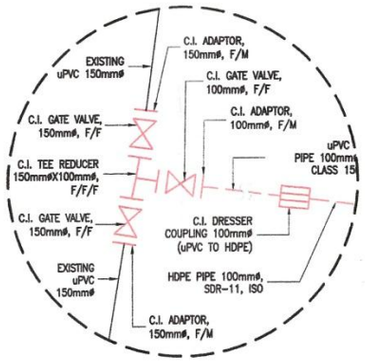


DIAGRAM "A"

SCALE NTS

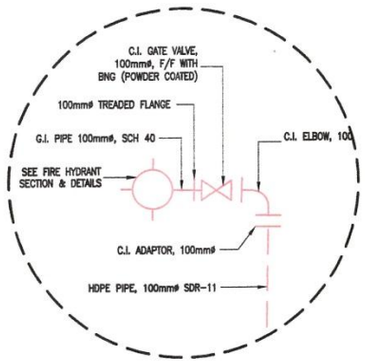


DIAGRAM "B"

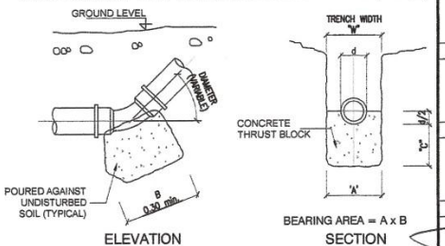
SCALE NTS

TABLE OF MINIMUM THRUST BLOCK DIMENSION FOR PIPE SIZES 75mm TO 300mmø				
PIPE SIZE	"C"	THRUST BLOCK BEARING AREAS IN SQUARE METERS		
mm (in)	METERS	90° BEND	45° BEND	22 ½°BEND
75mm(3") & 100mm(4")	0.25	0.14	0.12	+
150mm (6")	0.25	0.31	0.17	0.12
200mm (8")	0.25	0.54	0.30	0.15
250mm (10")	0.25	0.85	0.46	0.24
300mm (12")	0.30	1.23	0.66	0.34

(*) ONLY IF ORDERED BY ENGINEER

NOTES:

1. ABOVE AREAS ARE BASED ON AN ASSUMED SOIL BEARING PRESSURE 96 KPa (2000 psf)
2. REDUCE OR INCREASE AREAS PROPORTIONATELY TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL OF ENGINEER
3. CONCRETE FOR THRUST BLOCK SHALL BE 13.8 MPa (2000 psi)
4. WHERE PIPE CONNECTS TO A FITTING ON A STEEL PIPELINE, THE STEEL PIPELINE SHALL BE BLOCKED AS SHOWN HEREON
5. BEARING AREAS ARE BASED ON INTERNAL PRESSURE OF 106m (150 psi)



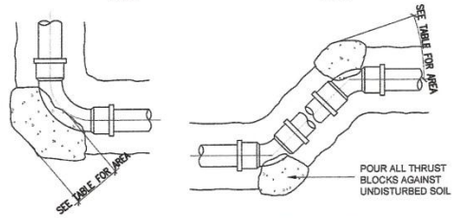
VERTICAL CONCRETE THRUST BLOCKS (DOWNWARD TRUST)

SCALE N T S

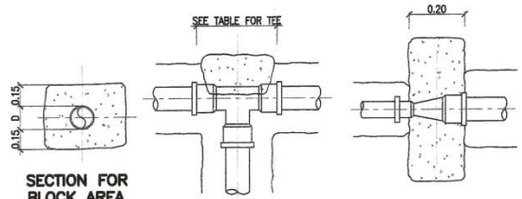
TABLE OF MINIMUM THRUST BLOCK BEARING AREAS IN SQUARE METERS FOR PIPE SIZES 75mm TO 300mmø				
PIPE SIZE mm (in)	TEE AND DEAD END	90° BEND	45° BEND	22 ½° BEND
75 (3")	0.05	0.07	0.04	0.02
100 (4")	0.09	0.12	0.07	0.04
150 (6")	0.20	0.28	0.15	0.08
200 (8")	0.35	0.50	0.27	0.14
250 (10")	0.55	0.77	0.42	0.21
300 (12")	0.79	1.11	0.60	0.31

NOTES:

1. ABOVE AREAS ARE BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 96 KPa (2000 psf)
2. REDUCE OR INCREASE AREA PROPORTIONATELY TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL OF ENGINEER
3. CONCRETE FOR THRUST BLOCK SHALL BE 13.8 MPa (2000 psi)
4. ALL CONCRETE SHALL BE POURED TO AVOID INTERFERENCE WITH JOINTS
5. WHERE PIPE CONNECTS TO A FITTING IN A STEEL PIPELINE, THE STEEL PIPELINE SHALL BE BLOCKED AS SHOWN HEREON
6. BEARING AREAS ARE BASED ON INTERNAL PRESSURE OF 106m (150 psi)



90° ELBOW OR BEND — OFFSETS AND BEND

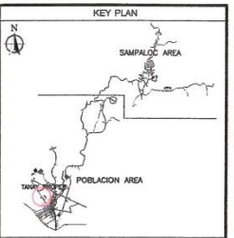


SECTION FOR BLOCK AREA — TEE — REDUCER

CONCRETE ANCHOR BLOCK

SCALE N T S

KEY PLAN



NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSION AND CONDITIONS AT THE SITE AND SHALL NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK.

CADD BY:
MR. ALLEN B. SACRAMENTO
AUTOCAD OPERATOR/DRAFTSMAN

PREPARED BY:
ENGR. MARVIN A. BALAGOT
SUPERVISING ENGINEER

CHECKED BY:
ENGR. JENNET S. LORENZO
ENGINEERING DIVISION MANAGER

RECOMMENDED FOR APPROVAL:
ENGR. ARMANDO H. BONGAT
ENGINEERING DEPARTMENT MANAGER

APPROVED BY:
MR. EMMANUEL C. CATOLOS
GENERAL MANAGER C

REVISION

NO.	DESCRIPTION	CAD BY	PRPD BY	CKD BY	APRD BY	DATE
A	ISSUED FOR APPROVAL	ABB	MAB	JBL	APB	EGC	JUL. 15, 2020

OWNER:
TANAY WATER DISTRICT
WD Bldg. #1 P.T. Cetapuan St. Brgy Plaza Aldea Tanay Rizal
Tel Nos. 654-4450 / 654-0333 / 654-3891

CONTRACTOR:

PROJECT TITLE:
CONST. / INSTALLATION OF 100mmØ & 50mmØ HDPE DISTRIBUTION LINE

DRAWING TITLE:
DIAGRAM, CONNECTION, & THRUST BLOCK DETAILS

LOCATION:
Sitio Gayas, Brgy Kat Bayani, Tanay, Rizal

DRAWING NO.	SHEET NO.	REV. NO.
	3 OF 3	A

F:\BACKUP\Allen Files\Program of Works for 2018\Prop. Pipe laying\Sitio Gayas\Proposed Pipelaying of 100mm dia HDPE Pipe at Sitio Gayas.dwg

Section VIII. Bill of Quantities

BILL OF QUANTITIES

Pay Item No.	**Description**	Unit	Qty.	**Unit Price** (Pesos)	**Amount** (Pesos)
1.0: General Requirements					
1.1	Permits and Licenses	lot	1.00	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
1.2	Project Billboard	lot	1.00	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
				SUB-TOTAL FOR PART 1:	
2.0: Mobilization / Demobilization					
	Mobilization / Demobilization	lot	1.00	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php

				SUB-TOTAL FOR PART 2:	
3.0 Fabrication of Barricades					
	Fabrication of Barricades	lot	1.00	In words: Pesos _____ _____ _____ _____ _____	In words: Pesos _____ _____ _____ _____ _____
				SUB-TOTAL FOR PART 3:	
4.0 Pipelaying with Related Works					
4.1	Concrete Pavement Cutting	mtrs	471	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.2	Concrete Pavement Breaking	Sq. m	64	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.3	Jetting Works	Lot	1	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php

4.4	Excavation of Trenches	cu. m.	43	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.5	Sand Bedding	cu. m.	15	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.6	Pipe Laying (HDPE 4"Ø Pipe & uPVC 4" Ø Pipe) Works	mtrs.	93	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.7	Pipe Laying Works (PE Tubing 32mmØ ISO)	mtrs.	383	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php

4.8	Backfilling of Trenches (Depth = 0.35m, 0.25m)	cu. m.	21	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.9	Compaction of Trenches	Sq. m.	64	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.10	Hydrotesting & Disinfection	mtrs.	93	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.11	Interconnection Works	lot	1	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php

4.12	Installation of Fire Hydrant	lot	1	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.13	Tapping Works	sets	28	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
4.14	Restoration Works	cu. m.	10	In words: Pesos _____ _____ _____ _____ _____ In figures: Php	In words: Pesos _____ _____ _____ _____ _____ In figures: Php
				SUB-TOTAL FOR PART 4:	
				Total Amount in Figures	

Total Amount in words:

_____

_____

_____

Submitted by: Contract Duration: _____ Calendar Days

Name_____ in the capacity of_____
Signed_____ Date_____
Duly authorized to sign the Bid for and on behalf of _____

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
1.0	General Requirements (Fabrication of Project Billboard)	1.00	lot

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS	1.0	Tarpaulin 4" x 8"		pcs		-
	2.0	Good Lumber 2" x 1/2" x 8 (Lintel)		pcs		-
	3.0	Coco Lumber 2" x 2" x 10"		pcs		-
	4.0	CWN 4"		kg		-
	5.0	CWN 3"		kg		-
	6.0	CWN 1 1/2"		kg		-
	7.0	G.I. Tie Wire #16		kg		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
						-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Skilled				-
	2.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
3.0	**Fabrication of Barricades**	**1.00**	**lot**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS	1.0	Coco Lumber 2" x 2" x 12"		pcs		-
	2.0	CWN 3"		kg		-
	3.0	Portland Cement		bags		-
	4.0	Sand		cu.m		-
	5.0	Gravel		cu.m		-
	6.0	QDE White		liters		-
	7.0	QDE Red		lit.		-
	8.0	Paint Thinner		lit.		-
	9.0	Paint Brush 2"		pcs.		-
	10.0	Caution Tape (300m/roll)		roll		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
						-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Skilled				-
	2.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

_____

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.1	Concrete Pavement Cutting	471.00	meters

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						-
						-
						-
						-
						-
					TOTAL for MATERIALS	-

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Concrete Cutter				-
					TOTAL for EQUIPMENT	-

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Concrete Cutter Operator				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	-

ESTIMATED DIRECT COST (EDC)	-
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	-
CONTRACTOR'S PROFIT 10% (CP)	-
VALUE ADDED TAX 5% of (EDC+OCM+CP)	-
ESTIMATED INDIRECT COST	-
TOTAL COST	-
UNIT COST	-
ADJUSTED TOTAL COST	

Prepared by:

_____

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.2	Concrete Pavement Breaking	64.00	sq.m.

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						-
						-
						-
						-
						-
					TOTAL for MATERIALS	-

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Air Compressor w/ Jack Hammer				-
	2.0	Portable Jack hammer				-
					TOTAL for EQUIPMENT	-

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Jack Hammer Operator				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	-

ESTIMATED DIRECT COST (EDC)	-
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	-
CONTRACTOR'S PROFIT 10% (CP)	-
VALUE ADDED TAX 5% of (EDC+OCM+CP)	-
ESTIMATED INDIRECT COST	-
TOTAL COST	-
UNIT COST	-
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.3	Jetting Works	1.00	lot

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						-
						-
						-
						-
						-
					TOTAL for MATERIALS	-

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT	1.0	Jetting Tools				-
					TOTAL for EQUIPMENT	-

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Pipe Fitter / Plumber				-
	4.0	Labor/Helper				-
					TOTAL for LABOR	-

ESTIMATED DIRECT COST (EDC)	-
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	-
CONTRACTOR'S PROFIT 10% (CP)	-
VALUE ADDED TAX 5% of (EDC+OCM+CP)	-
ESTIMATED INDIRECT COST	-
TOTAL COST	-
UNIT COST	-
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.4	Excavation of Trenches	43.00	cu.m.

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						-
						-
						-
				TOTAL for MATERIALS		-

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
				TOTAL for EQUIPMENT		-

	NO.	DESIGNATION OF PERSONNEL	UNIT	QTY.	HOURLY RATE	COST
LABOR						
	1.0	Pakyaw System @ P550.00 / cu.m	cu.m.			-
					TOTAL for LABOR	-

ESTIMATED DIRECT COST (EDC)	-
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	-
CONTRACTOR'S PROFIT 10% (CP)	-
VALUE ADDED TAX 5% of (EDC+OCM+CP)	-
ESTIMATED INDIRECT COST	-
TOTAL COST	-
UNIT COST	-
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	**NAME OF ITEM**	**QUANTITY**	**UNIT OF MEASUREMENT**
4.5	**Sand Bedding**	**15.00**	**cu.m.**

	NO.	**NAME AND SPECIFICATIONS OF MATERIALS**	**QTY**	**UNIT**	**UNIT RATE**	**COST**
MATERIALS						
	1.0	Sand		cu.m.		-
						-
						-
					TOTAL for MATERIALS	**-**

	NO.	**NAME AND CAPACITY OF EQUIPMENT / TOOLS**	**NO. OF UNITS**	**NO. OF HRS**	**HOURLY RATE**	**COST**
EQUIPMENT						
						-
					TOTAL for EQUIPMENT	**-**

	NO.	**DESIGNATION OF PERSONNEL**	**NO. OF UNITS**	**NO. OF HRS**	**HOURLY RATE**	**COST**
LABOR						
	1.0	Supervisor/Foreman				-
	2.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.6	**Pipe Laying (HDPE 4"Ø Pipe & uPVC 4" Ø Pipe) Works**	**93.00**	**meters**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
	1.0	HDPE Pipe 4"Ø, SDR-11 ISO (Blue)		meters		-
	2.0	uPVC Blue Pipe 4"Ø x 6m class 150 S8		pcs		-
	3.0	C.I. Dresser Coupling 4"Ø (uPVC to HDPE)		pc		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Butt Fusion Equipment /Machine				-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR						
	1.0	Construction Foreman				-
	2.0	Butt Fusion Operator				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.7	**Pipe Laying Works (PE Tubing 32mmØ ISO)**	**383.00**	**meters**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
	1.0	PE Tubing HDPE 32mm (SDR-11) ISO (1 roll x 100 m) (1"Ø)		rolls		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Concrete Cutter				-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR						
	1.0	Construction Foreman				-
	2.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Note:

including concrete cutting & chipping

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.8	**Backfilling of Trenches** (Depth = 0.35m, 0.25m)	**21.00**	**cu.m.**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
	1.0	Detectable Warning tape (with "Buried water Line" marking, 300 mtrs.)		meters		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	QTY.	UNIT	HOURLY RATE	COST
LABOR						
	1.0	Pakyaw System @ P100.00 / cu.m		cu.m.		-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.9	**Compaction of Trenches**	**64.00**	**sq.m.**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Tampering Machine / Plate Compactor				-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Tampering Machine Operator				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

_____

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.10	Hydrotesting & Disinfection	93.00	meters

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
	I.	***Pressure & Leakage Test***				
	1.0	Water Meter Assembly and Mechanical End Cap		lot		-
	II.	***Disinfection***				
	1.0	Chlorine solution		lot		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	QTY	UNIT	UNIT RATE	COST
EQUIPMENT						
	1.0	Hydrotesting Machine		lot		-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Pipe Fitter / Plumber				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

_____

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.11	**Interconnection Works**	**1.00**	**lot**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS	1.0	C. I. Adaptor, 4"Ø F/M for HDPE with BNG		pcs.		-
	2.0	C. I. Adaptor, 6"Ø F/M for HDPE with BNG		pcs.		-
	3.0	C. I. Tee Reducer 6"Ø x 4"Ø, F/F/F with BNG		pc		-
	4.0	C. I. Gate Valve, 6"Ø, F/F with BNG (Powder Coated)		pcs.		-
	5.0	C. I. Gate Valve, 4"Ø, F/F with BNG (Powder Coated)		pc		-
	7.0	C. I. Valve Box Cover, 6"Ø		pcs.		-
	8.0	PVC Pipe 6"Ø x 6 mtrs., orange (Ordinary)		pc		-
	9.0	Cement		bags		-
	10.0	Sand		cu.m.		-
	11.0	Gravel		cu.m.		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
						-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Pipe Fitter / Plumber				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.12	**Installation of Fire Hydrant**	**1.00**	**lot**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS	1.0	C. I. Adaptor, 4"Ø F/M for HDPE with BNG		pc.		-
	2.0	C. I. Gate Valve, 4"Ø F/F with BNG (Powder Coated)		pc.		-
	3.0	C. I. Elbow, 4"Ø F/F		pc		-
	4.0	C. I. Threaded Flange, 4"Ø		pc.		-
	5.0	G. I. Pipe, 4"Ø x 6m Sch. 40, Std.		pc.		-
	6.0	G. I. Elbow, 4"Ø, sch. 40		pc.		-
	7.0	Brass Fire Hydrant Head, 4" x 2 1/2"		pc.		-
	8.0	C. I. Valve Box Cover, 6"Ø		pcs.		-
	9.0	PVC Pipe Orange 6"		pc		-
	10.0	Teflon Tape 3/4"		pcs.		-
	11.0	Metal Primer Gray with Catalyst		lit		-
	12.0	QDE Yellow		lit		-
	13.0	QDE Black		lit		-
	14.0	Paint Brush 2"		pcs.		-
	15.0	Lacquer Thinner		bot.		-
	16.0	Paint Thinner		bot.		-
	17.0	Masking Tape 1"		pc		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
						-
						-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Supervisor / Foreman				-
	2.0	Pipefitter / Plumber				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	NAME OF ITEM	QUANTITY	UNIT OF MEASUREMENT
4.13	**Tapping Works**	**28.00**	**sets**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS	1.0	C. I. Saddle Clamp 4"Ø x 25mmØ (1"Ø)		pcs.		-
	2.0	Compression Fittings (MTA) 32mm (NLC) ISO (1"Ø)		pcs.		-
	3.0	PE Tubing HDPE 32mm (SDR-11) ISO (1 roll x 100 m) (1"Ø)		meters.		-
	4.0	G. I. Tee 1" sch. 40		pcs.		-
	5.0	G. I. Coupling 1" sch. 40		pcs.		-
	6.0	G. I. Plug 1" sch. 40		pcs.		-
	7.0	Teflon Tape 1/2"		pcs.		-
	8.0	Cement		bags		-
	9.0	Sand		cu.m.		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
	1.0	Tapping Tools				-
	2.0	Conccrete Cutter				-
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR	1.0	Construction Foreman				-
	2.0	Pipe Fitter / Plumber				-
	3.0	Labor/Helper				-
	4.0	Concrete Cutter Operator				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

DETAILED ESTIMATES

PROJECT:	**Proposed Construction/Installation of 100mmØ HDPE Pipe Distribution Line**	**DATE:**	
LOCATION:	**Sitio Gayas, Brgy. Kat Bayani, Tanay, Rizal**	**REV. NO:**	

ITEM NO.	**NAME OF ITEM**	**QUANTITY**	**UNIT OF MEASUREMENT**
4.14	**Restoration Works**	**10.00**	**cu.m.**

	NO.	NAME AND SPECIFICATIONS OF MATERIALS	QTY	UNIT	UNIT RATE	COST
MATERIALS						
	1.0	Ready Mix Concrete, 3000psi @28days		cu.m.		-
	2.0	Gravel G1		cu.m.		-
					TOTAL for MATERIALS	**-**

	NO.	NAME AND CAPACITY OF EQUIPMENT / TOOLS	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
EQUIPMENT						
					TOTAL for EQUIPMENT	**-**

	NO.	DESIGNATION OF PERSONNEL	NO. OF UNITS	NO. OF HRS	HOURLY RATE	COST
LABOR						
	1.0	Construction Foreman				-
	2.0	Mason				-
	3.0	Labor/Helper				-
					TOTAL for LABOR	**-**

ESTIMATED DIRECT COST (EDC)	**-**
OVERHEAD CONTINGENCIES & MISC. 15% (OCM)	**-**
CONTRACTOR'S PROFIT 10% (CP)	**-**
VALUE ADDED TAX 5% of (EDC+OCM+CP)	**-**
ESTIMATED INDIRECT COST	**-**
TOTAL COST	**-**
UNIT COST	**-**
ADJUSTED TOTAL COST	

Prepared by:

Section IX. Checklist of Technical and Financial Document

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);
  or
- ☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;
  and
- ☐ (c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;
  and
- ☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

- ☐ (f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- ☐ (g) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**
- ☐ (h) Philippine Contractors Accreditation Board (PCAB) License;
  or
  Special PCAB License in case of Joint Ventures;
  and registration for the type and cost of the contract to be bid; **and**
- ☐ (i) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
  or
  Original copy of Notarized Bid Securing Declaration; **and**
- (j) Project Requirements, which shall include the following:
  - ☐ a. Organizational chart for the contract to be bid;
  - ☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
  - ☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- ☐ (k) Original duly signed Omnibus Sworn Statement (OSS);
  and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

- ☐ (l) The prospective bidder's audited financial statements, showing, among

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

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

Class "B" Documents

☐ (n) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence;

or

duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

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

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

☐ (r) Cash Flow by Quarter.


Republic of the Philippines
gppb
Government Procurement Policy Board