

PHILIPPINE BIDDING DOCUMENTS

Construction of Reservoir for Paglintian Spring Water System at Purok 4- A, Mangayon

PID NO. 2022 - 100

Government of the Republic of the Philippines

**Sixth Edition
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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid



Republic of the Philippines
Province of Davao de Oro
MUNICIPALITY OF COMPOSTELA
BIDS AND AWARDS COMMITTEE
CP#: 0909-279-9827



Invitation to Bid for Construction of Reservoir for Paglintian Spring Water System at Purok 4-A, Mangayon

1. The *Municipality of Compostela*, through the *Supplemental Fund No. 1 CY 2022 (General Fund)* intends to apply the sum of *One Million One Hundred Seventy-Six Thousand Five Hundred Pesos Only (P1,176,500.00)* being the Approved Budget for the Contract (ABC) to payments under the contract for *Construction of Reservoir for Paglintian Spring Water System at Purok 4-A, Mangayon with Project Identification No. 2022-100*. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The Municipality of Compostela now invites bids for the above Procurement Project. Completion of the Works is required *60 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 Municipality of Compostela and inspect the Bidding Documents at the address given below from *8:00 a.m. to 5:00 p.m.*
5. A complete set of Bidding Documents may be acquired by interested bidders on ***September 14, 2022 to October 4, 2022*** from given address and website below *upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Five Thousand Pesos (P5,000.00)*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees ***presented in person***.
6. The Municipality of Compostela will hold a Pre-Bid Conference on ***September 22, 2022 at 1:30 p.m.*** at Office of the BAC, 2nd Floor, Municipal Hall Building, Dagohoy St., Purok 2, Poblacion, Compostela, Davao de Oro 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 ***October 4, 2022 at 1:00 p.m.*** Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be on ***October 4, 2022 at 1:30 p.m.*** at the given address below. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The *Municipality of Compostela* 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:

EDWARD FORD N. DAGATAN
BAC Office
2nd Floor, Municipal Hall Building, Dagohoy St., Purok 2,
Poblacion, Compostela, Davao de Oro
CP#: 0909-279-9827
Email Add: compobacsec@gmail.com
12. You may visit www.philgeps.gov.ph and search for Municipality of Compostela for downloading of Bidding Documents.

September 14, 2022

(Sgd.)
LUCELIA L. PAQUEO
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, *Municipality of Compostela*, invites Bids for the *Construction of Reservoir for Paglintian Spring Water System at Purok 4-A, Mangayon* with Project Identification Number 2022-100.

[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]

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 *CY 2022* in the amount of *One Million One Hundred Seventy-Six Thousand Five Hundred Pesos Only (P1,176,500.00)*.

2.2. The source of funding is: LGUs, the Supplemental Budget, as approved by the Sanggunian.

3. Bidding Requirements

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

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

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

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

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

5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA’s CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

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

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

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

7. Subcontracts

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

The Procuring Entity has prescribed that: *Subcontracting is not allowed*.

- 7.2. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor’s own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8. 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 at the *Office of the BAC, 2nd Floor, Municipal Hall Building, Dagohoy St., Purok 2, Poblacion, Compostela, Davao de Oro* 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 *One Hundred Twenty (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 15 shall be submitted for each contract (lot) separately.

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Bid Data Sheet

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: <b style="text-align: center;">WATERWORKS		
7.1	<i>Subcontracting is not allowed.</i>		
10.3	<i>No further instruction.</i>		
10.4	The key personnel must meet the required minimum years of experience set below:		
	<u>Key Personnel</u>	<u>General Experience</u>	<u>Relevant Experience</u>
	Project Engineer	5 years	3 years
	Foreman	3 years	1 year
	Mason	3 years	1 year
	Plumber	3 years	1 year
10.5	The minimum major equipment requirements are the following:		
	<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>
	One Bagger Mixer		1
	Concrete Vibrator		1
	Plumbing Tools		
12	<i>[Insert Value Engineering clause if allowed.]</i>		
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 P 23,530.00 <i>[Two percent (2%) of ABC]</i> , 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 P 58,825.00 <i>[Five percent (5%) of ABC]</i> if bid security is in Surety Bond.		
19.2	Partial bid is not allowed. The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.		
20	No further instructions.		
21	Additional contract documents are the following: NONE		

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	<i>Not applicable.</i>
4.1	<i>The procuring entity shall give possession of all parts of the site to the contractor upon receipt of the NTP.</i>
6	The site investigation reports are: <i>none</i>
7.2	Five (5) 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 <i>Ten (10)</i> 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 Fifty Thousand Pesos (P50,000.00).
13	The amount of the advance payment shall not exceed 15% of the total contract price which will only be released upon complete mobilization.
14	Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	The date by which operating and maintenance manuals are required is upon acceptance of the project. The date by which "as built" drawings are required is prior to the release of certificate of completion.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is <i>one percent (1%) of the contract amount.</i>

Section VI. Specifications

PROJECT NAME : CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON

DESCRIPTION : CONSTRUCTION OF ELEVATED CONCRETE RESERVOIR, 10,000 LITERS CAP. AND INSTALLATION OF 20 ROLLS 2" DIA. P.E PIPE

LOCATION : Purok 4-A, Mangayon, Compostela, Davao De Oro

GENERAL CONDITION & SPECIFICATIONS

GENERAL CONDITION

1. GENERAL

The drawing and the specifications are complementary to each other. Drawings are graphic means of showing work to be done. They are particularly suited to showing where materials are located. Thus, drawing exists essentially to show dimensions, location and placement. Not all works however can be presented in the drawings. Any doubts in the part of contractor shall be refer to the Municipal Engineer or the project engineer on site. Generalized works are usually in statement form, and hence the contractor is required to read the specifications carefully.

Specifications, on the other hand, are used to describe the materials, construction techniques, samples, shop drawings, guarantees and other contract requirements. Together, the drawing and the specifications are used to inform the contractor. In cases where the specified brand carries with it the manufacturer's specifications, the manufacturer's specifications shall hold precedence over these specifications.

2. SPECIFICATION

ITEM 900 - REINFORCED CONCRETE

900.1 Description

This Item shall consist of furnishing, placing and finishing concrete in buildings and related structures, flood control and drainage, ports, and water supply structures in accordance with this specification and conforming to the lines, grades, and dimension shown on the plans.

900.2 Materials Requirements

900.2.1 Portland Cement

This shall conform to the requirement of ITEM 700, Volume II (BlueBook), Hydraulic cement.

900.2.2 Concrete Aggregates

Concrete aggregate shall conform to the requirements of subsection 311.2.2 and 311.2.3 under Item 311 of Volume II, (Blue Book) and ASTM C 33 for lightweight aggregates, except that aggregates failing to meet these specifications but which have been shown by special test or actual service to produce concrete of adequate strength and durability may be used under method (2) of determining the proportion of concrete, where authorized by the Engineer.

Except as permitted elsewhere in this section, the maximum size of the aggregate shall be not larger than one-fifth (1/5) of the narrowest dimensions between sides of forms of the member for which the concrete is to be used nor larger than three-fourths of the minimum clear spacing between individual reinforcing bars or bundles of bars or pretensioning strands.

900.2.2.1 Aggregate Tests

Samples of the fine and coarse aggregates to be used shall be selected by the Engineer for tests at least 30 days before the actual concreting operations are to begin. It shall be the responsibility of the contractor to designate the source or sources of aggregate to give the Engineer sufficient time to obtain the necessary samples and submit them for testing.

No aggregate shall be used until official advice has been received that it has satisfactorily passed all test, at which time written authority shall be given for its use.

900.2.3 Water

Water used in mixing concrete shall conform to the requirement of subsection 311.2.4 under Item 311, Part E, of Volume II, (BlueBook).

900.2.4 Metal Reinforcement

Reinforcing steel bars shall conform to the requirements of the following Specifications:

Deformed & Plain Billet Steel Bars for concrete Reinforcement	(ASTM A 615)
Bars for concrete Reinforcement	AASHTO M 31

Deformed Rail - Steel and Plain Bars for Concrete Reinforcement	ASTM A 616
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Deformed A x b - Steel and Plain Bars for Concrete Reinforcement	ASTM A 617
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If reinforcing bars are to be welded, these ASTM specifications shall be supplemented by requirements assuring satisfactory weldability.

Bar and rod mats for concrete reinforcement	ASTM A 187
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Cold-Drawn Steel Wire for concrete reinforcement	(ASTM A 82) AASHTO M 32
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Welded steel wire fabric for concrete reinforcement	(ASTM A 185) AASHTO M55 except that the weld shear strength requirement of those specification shall be extended to include a wire size differential up to and including six gages.
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Wire and Strands for prestressed concrete	ASTM A 416 ASTM A 421
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Used in making strands for post-tensioning shall be cold- drawn and either stress-relieved in the case of uncoated strands, or hotdip galvanized in the case of galvanized strands.

High strength alloy steel bar for post-tensioning shall be proofstressed to 90 % of the granted tensile strength. After proofstressing, the bars shall conform to the following minimum properties:

Tensile strength f_s'	1000 MPa
Yield strength (0.2 offset)	0.90 f_s'
Elongation at rupture in 20 diameter	4 percent
Reduction of area at rupture	25 percent
Structural steel	ASTM A 36
Steel Pipe for concrete-filled pipe columns	ASTM A 53
Cast-Iron Pipe for composite columns	ASTM A 377

900.2.5 Admixtures

Air-entraining admixtures, if used, shall conform to ASTM C 260.

Water-reducing admixtures, retarding admixtures, water-reducing and retarding admixtures and water reducing and accelerating admixtures, if used, shall conform to the requirements of ASTM C 494.

900.2.6 Storage of Materials

Cement and aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter. Cement shall be stored, immediately upon arrival on the site of the work, in substantial, waterproof bodegas, with a floor raised from the ground sufficiently high to be free from dampness. Aggregates shall be stored in such a manner as to avoid the inclusion of foreign materials.

900.3 Construction Requirements

Notations: The notations used in these regulations are defined as follows:

f'_c = compressive strength of concrete

F_{sp} = ratio of splitting tensile strength to square root of compressive strength.

900.3.1 Concrete Quality

All plans submitted for approval or used for any project shall clearly show the specified strength, f'_c , of concrete of the specified age for which each part of the structure was designed. Concrete that will be exposed to sulfate containing or other chemically aggressive solutions shall be proportioned in accordance with "Recommended Practice for Selecting Proportions for Concrete (ACI 613)" and Recommended Practice for Selecting Proportions for Structural Lightweight Concrete (ACI 613A)."

900.3.2 Methods of Determining the Proportions of Concrete

The determination of the proportions of cement, aggregate, and water to attain the required strengths shall be made by one of the following methods, but lower water-cement ratios may be required for conformance__ with the quality of concrete.

Method 1, Without preliminary test

Where preliminary test data on the materials to be used in the concrete have not been obtained the water-cement ratio for a given strength of concrete shall not exceed the values shown in Table 900.1.' When strengths- in excess of 281 kilograms per square centimeter (4000 pounds per square inch) are required or when light weight aggregates or admixtures (other than those exclusively for the purpose of entraining - air) are used, the required water-cement ratio shall be determined in accordance with Method 2.

Method 2. For combination of materials previously evaluated or to be established by trial mixtures.

Water-cement ratios for strengths greater than that shown in Table I 900.1 may be used provided that the relationship between strength and I water-cement ratio for the materials to be used has been previously established by reliable test data and the resulting concrete satisfies the . requirements of concrete quality.

Where previous data are not available. Concrete trial mixtures having proportions and consistency suitable for the work shall be made using at least three different water-cement ratios (or cement content in I the case of lightweight aggregates) which will produce a range of strengths encompassing those required for the work. For each water-cement ratio (or cement content) at least three specimens for each age to be tested shall be made, cured and tested for strength in accordance with ASTM C 39 and C 192.

The strength test shall be made at 7, 14 and 28 days at which the concrete is to receive load, as indicated on the plans. A curve shall be established showing the relationship between water-cement ratio (or cement content) and compressive strength. The maximum permissible water-cement ratio for the concrete to be used in the structure shall be that shown by the curve to produce an average strength to satisfy the requirements of the strength test of concrete provided that the water-cement ratio shall be no' greater than that required by concrete quality when concrete that is to be subjected to the freezing temperatures which weight shall have a water-cement ratio not exceeding 6 gal per bag and it shall contain entrained air.

Where different materials are to be used for different portions of the work, each combination shall be evaluated separately.

TABLE 900.1 MAXIMUM PERMISSIBLE WATER-CEMENT RATIOS FOR CONCRETE (METHOD NO.1)

Specified compressive strength at 28 days, psi fc	Maximum permissible water-cement ratio			
	Non air-entrained concrete		Air-entrained concrete	
	U.S. gal. per 42.6 kg. bag of cement	Absolute ratio by weight	U.S. gal per 42.6 kg. bag of cement	Absolute ratio by weight
2500	7 ¼	0.642	6 ¼	0.554
3000	6 ½	0.576	5 ¼	0.465
3500	5 ¾	0.510	4 ½	0.399
4000	5	0.443	4	0.354

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900.3.3 Concrete Proportions and Consistency

The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the form and around reinforcement with the method of placing employed on the work, but without permitting the materials to segregate or excess free water to collect on the surface. The methods of measuring concrete materials shall be such that the proportions can be accurately controlled and easily checked at any time during the work.

900.3.4 Sampling and Testing of Structural Concrete

As work progress, at least one (1) set of sample consisting of three (3) concrete cylinder test specimens, 150 x 300 mm shall be taken from each class of concrete placed each day, and each set to represent not more than 75 cu m of concrete.

900.3.5 Consistency

Concrete shall have a consistency such that it will be workable in the required position. It shall be such a consistency that it will flow around reinforcing steel but individual particles of the coarse aggregate when isolated shall show a coating or mortar containing its proportionate amount of sand. The consistency of concrete shall be gauged by the ability of the equipment to properly place it and not by the difficulty of mixing water shall be determined by the Engineer and shall not be varied without his consent. Concrete as dry as it is practical to place with the equipment specified shall be used.

900.3.6 Strength Test of Concrete

When strength is a basis for acceptance, each class of concrete shall be represented by at least five test (10 specimens). Two specimens shall be made for each test at a given age, and not less than one test shall be made for each 150 cu yd of structural concrete, but there shall be at least one test for each days concreting. The Building Official may require a reasonable number of additional tests during the progress of the work. Samples from which compression test specimens are molded shall be secured in accordance with ASTM C 172. Specimens made to check the adequacy of the proportions for strength of concrete or as a basis for acceptance of concrete shall be made and laboratory-cured in accordance with ASTM C 31. Additional test specimens cured entirely under field conditions may be required by the Building Official to check the adequacy of curing and protection of the concrete. Strength tests shall be made in accordance with ASTM C 39.

The age for strength tests shall be 28 days Of, where specified, the earlier age at which the concrete is to receive its full load or maximum j stress. Additional test may be made at earlier ages to obtain advance information on the adequacy of strength development where age-strength relationships have been established for the materials and proportions used.

To conform to the requirements of this Item:

1. For structures designed in accordance with the working stress design method of this chapter, the average of any five consecutive strength tests of the laboratory-cured specimens representing each class of concrete shall be equal on or greater than the specified strength, f_c' , and not more than 20 percent of the strength test shall have values less than that specified.

2. For structures designed in accordance with the ultimate strength design method of this chapter, and for prestressed structures the average of any three consecutive strength test of the laboratory, cured specimens representing each class of concrete shall be equal to or greater than the specified strength, f_c' and not more than 10 percent of the strength tests shall have values less than the specified strength.

When it appears that the laboratory-cured specimens will fail to conform to the requirements for strength, the Engineer shall have the right to order changes in the concrete sufficient to increase the strength to meet these requirements. The strengths of the specimens cured on the job are intended to indicate the adequacy of protection and curing of the concrete and may be used to determine when the forms may be stripped, shoring removed, or the structure placed in service. When, in the opinion of the Building Official, the strengths of the job-cured specimens, the contractor may be required to improve the procedures for protecting and curing the concrete, or when test of field-cured cylinders indicate deficiencies in protection and curing, the Engineer may require test in accordance with ASTM Specification C 42 or order load tests as outlined in the load tests of structures for that portion of the structure where the questionable concrete has been placed.

900.3.7 Splitting Tensile Test of Concrete

To determine the splitting ratio, F_{sp} , for a particular aggregate, test of concrete shall be made as follows:

1. Twenty four (24) 15 cm. dia. by 30 cm long (6 in. dia. by 12 in. long) cylinders shall be made in accordance with ASTM C 192, twelve at a compressive strength level of approximately 210 kilograms per square centimeter (3000 psi) and twelve at approximately 280 kilograms per square centimeter (4000 psi) or 350 kilograms per square centimeter (5000 psi). After 7 days moist curing followed by 21 days drying at 23C (73F) and 50 percent relative humidity, eight of the test cylinders at each of the two strength levels shall be tested for splitting strength and four for compressive strength.

2. The splitting tensile strength shall be determine in accordance with ASTM C 496, and compressive strength in accordance with ASTM C 39.

The ratio, F_{sp} , of splitting tensile strength to the square root of compressive strength shall be obtained by using the average of all 16 splitting tensile test and all 8 compressive tests.

Minimum Strength, Concrete other than fill, shall have a minimum compressive strength at 28 days of 140 kilograms per square centimeter (2000 psi).

900.3.8 Batching

Batching shall conform to the requirements of Item 405, Structural Concrete.

900.3.9 Mixing and Delivery

Mixing and delivery shall conform to the requirements of Item 405, Structural Concrete.

900.4 Concrete Surface Finishing: General

This shall be in accordance with Item 407, Concrete Structures.

900.5 Curing Concrete (See subsection 407)

900.6 Acceptance of Concrete

The strength of concrete shall be deemed acceptable if the average of 3 consecutive strength test results is equal to or exceed the specified strength and no individual test result falls below the specified strength by more than 15 %.

Concrete deemed to be not acceptable using the above criteria may be rejected unless contractor can provide evidence, by means of core tests, that the quality of concrete represented by the failed test result is acceptable in place. Three (3) cores shall be obtained from the affected area and cured and tested in accordance with AASHTO T24.

Concrete in the area represented by the cores will be deemed acceptable if the average of cores is equal to or at least 85 % and no sample core is less than 75 % of the specified strength otherwise it shall be rejected.

900.7 Method of Measurement

The quantity of concrete to be paid shall be the quantity shown in the Bid Schedule, unless changes in design are made in which case the quantity shown in the Bid Schedule will be adjusted by the amount of the change for the purpose of payment. No deduction will be made for the volume occupied by the pipe less than 101 mm (4") in diameter nor for reinforcing steel anchors, weepholes or expansion materials.

900.8 Basis of Payment

The accepted quantities of structural concrete completed in place will be paid for at the contract unit price for cubic meter as indicated on the Bid Schedule.

Pay Item and Description	Unit of measurement
Structural Concrete	Cubic Meter

Such prices and payment shall be full compensation for furnishing all materials, including metal water stops, joints, joint fillers, weep holes, and rock backing and timber bumpers; for all form and false work; for mixing, placing, furnishing, and curing the concrete; and for all labor, materials, equipment, tools and incidentals necessary to complete the item, except that reinforcing steel shall be paid for at the contract unit price per kilogram for reinforcing steel metal pipes and drains, metal conduits and ducts, and metal expansion angles shall be paid for as structural steel that when the proposal does not include an item for structural steel these miscellaneous metal parts shall be paid for as reinforcing steel.

ITEM 1003 - CARPENTRY AND JOINERY WORKS

1003.1 Description

The work under this Item shall consist of furnishing all required materials, fabricated woodwork, tools, equipment and labor and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in strict accord with applicable drawings, details and these Specifications.

1003.2 Material Requirements

1003.2.1 Lumber

Lumber of the different species herein specified for the various parts of the structure shall be well seasoned, sawn straight, sundried or kilndried and free from defects such as loose unsound knots, pitch I~- pockets, sapwood, cracks and other imperfections impairing its strength, durability and appearance.

1003.2.1.1 Grades of Lumber and Usage

a. Stress grade is seasoned, close-grained and high quality lumber 1~ of the specified specie free from defects and suitable for sustaining heavy loads.

Stress grade lumber shall be used for wooden structural members, subject to heavy loads, and for sub-floor, framing embedded or in contact with concrete or masonry.

b. Select grade lumber of the specified specie is generally of high quality, of good appearance, without imperfections, and suitable for use ff without waste due to defects and suitable also for natural finish.

Select grade lumber shall be used for flooring; sidings, facia and it base boards, trims, mouldings, millwork, railings, stairs, cabinet work, shelvings, doors, windows and frames of openings.

c. Common grade lumber has minimum tight medium knot not larger, than 25 mm in diameter, with minimal imperfections, without sapwood, without decay, insect holes, and suitable for use with some waste due to minor defects and suitable also for paint finish.

Common grade lumber shall be used for light framework for wall partitions, ceiling joist and nailers.

1003.2.1.2 Lumber Species and Usage

Unless otherwise specified on the Plans, the following lumber species shall be used as indicated:

a. Yacal (stress grade) for structural member such as post, girders, girts, sleepers door and window frames set or in contact with concrete or masonry.

b. Guijo (select grade) for door and window frames set in wooden framework, for stairs, for roof framing supporting ceramic or cement tiles, for floor joists and other wooden structural parts.

c. Apitong (common grade) for roof framing supporting light roofing materials such as galvanized iron, aluminum or asbestos sheets, for wall framing, ceiling joists, hangers and nailers.

d. Tanguile (select grade) for doors and windows, facia and base boards, trims, mouldings, millwork, railings, stairs, cabinet, work, shelvings, flooring and siding.

e. Narra (select grade) for stair railings, flooring boards, wall panels base boards, trims, mouldings, cabinet work, millwork, doors and windows when indicated as such in the Plans.

f. Dao (select grade) for parts of the structure as enumerated under Section 1003.2.1.2 (e), when indicated as such on the Plans.

1003.2.1.3 Moisture Content

Rough lumber for framing and siding boards shall be air-dried or sun-dried such that its moisture content shall not exceed 22 percent. Dressed lumber for exterior and interior finishing, for doors and windows, millwork, cabinet work and flooring boards shall be kiln-dried and shall not have moisture content in excess of 14 percent at the time of installation in the structure.

1003.2.1.4 Substitution in Lumber Specie

Any lumber equally good for the purpose intended may be substituted for the specified kind subject to the prior approval of the Engineer, provided the substitution shall be of an equal or better specie acceptable to the Engineer. In case of substitution with better specie, no additional cost therefore shall be allowed to the contractor.

1003.2.2 Plyboard

Plyboard shall be good grade and made of laminated wood strips of uniform width and thickness bounded together with water resistant resin glue. The laminated core shall be finished both faces with select grade tanguile or red lauan veneers not less than 2 mm thick similarly bonded to the core. The plyboard of not less than 19 mm thick shall be free from defects such as split in veneer, buckling or warping.

1003.2.3 Plywood

Plywood shall conform to the requirements of the Philippine Trade Standards 631-02. Thickness of a single layer laminae shall not be less than 2 mm. The laminae shall be superimposed in layers with grains crossing at right angles in successive layers to produce stiffness. The face veneers shall be rotary cut from select grade timber. The laminae and face veneers shall be bonded with water resistant resin glue, hot pressed and pressure treated. Ordinary tanguile or red lauan plywood with good quality face veneers, 6 mm thick shall be used for double walling and ceiling not exposed to moisture; waterproof or marine plywood shall be used for ceiling exposed to moisture such as at toilets and eaves, and ceiling to be finished with acrytex.

1003.2.4 Lawanit

Lawanit, when required per plans, shall be 6 mm thick, tempered or oil impregnated for moisture/water resistance. Texture of lawanit shall be subject to the approval of the Engineer.

1003.2.5 Materials Other Than Lumber

1003.2.5.1 Plastic Sheet

When required for counter top, plastic sheet such as Formica shall not be less than 1.50 mm thick and shall have hard, durable and glossy surface resistant to stain, abrasion and heat. Color and design shall be as selected from the manufacturer's standard and approved by the Engineer.

1003.2.5.2 Glue

Glue shall be from water resistant resins which, upon hardening, shall not dissolve nor lose its bond or holding power even when soaked with water for extended period.

Glue in powder form be in sealed container and shall be without evidence of lumping or deterioration in quality.

1003.2.5.3 Fasteners

Nails, screw, belts and straps shall be provided and used where suitable for fixing carpentry and joinery works. All fasteners shall be brand new and of adequate size to ensure rigidity of connections.

a. Nails of adequate size shall be steel wire, diamond-pointed, ribbed shank and bright finish.

b. Screws of adequate size shall be cadmium or brass plated steel with slotted head.

- c. Lag screws of adequate size, for anchoring heavy timber framing in concrete or masonry, shall be galvanized steel.
- d. Bolts and nuts shall be of steel having a yield point of not less than 245 MPa. Bolts shall have square heads and provided with standard flat steel washers and hexagonal nuts. Threads shall conform to American coarse thread series. The threaded portion shall be long enough such that the nut can be tightened against the bolted members without any need for blocking. The bolt's threaded end shall be finished smooth for ease of engaging and turning of the nut.
- e. Wrought iron straps or angles, when required in conjunction with bolts or lag screws to provide proper anchorage, shall be of the shape and size shown on the Plans.

1003.3 Construction Requirements

1003.3.1 Quality of Materials

All materials to be incorporated in the carpentry and joinery works shall be of the quality specified under Section 2. Before incorporation in work, all materials shall have been inspected/accepted by the Engineer or his authorized representative.

1003.3.2 Storage and Protection of Materials

Lumber and other materials shall be protected from dampness during and after delivery at the site. Materials shall be delivered well in advance of actual need and in adequate quantity to preclude delay in the work. Lumber shall be piled in orderly stack at least 150 mm above ground and at sheltered place where it will be of least obstruction to the work.

1003.3.3 Shop Drawings

Shop drawings complete with essential dimensions and details of construction, as may be required by the Engineer in connection with carpentry and joinery work, shall be submitted for approval before proceeding with the work.

1003.3.4 Rough Carpentry

Rough carpentry covers timber structural framing for roof, flooring, siding, partition and ceiling.

- a. Framing shall be stress grade or common grade lumber of the specie specified under Section.
- b. Rough carpentry shall be done true to lines, levels and dimensions. It shall be squared, aligned, plumbed and well fitted at joints.
- c. Trusses and other roof framing shall be assembled, fitted and set to exact location and slope indicated on the Plans.
- d. Fasteners, connectors and anchors of appropriate type and number shall be provided and fitted where necessary.
- e. Structural members shall not be cut, bored or notched for the passage of conduits or pipes without prior approval of the Engineer. Members damaged by such cutting or boring shall be reinforced by means of specifically formed and approved steel plates or shapes, otherwise, damaged structural members shall be removed and replaced to the satisfaction of the Engineer.
- f. Timber framing in contact with concrete or masonry shall be treated with termite-proofing solution and after drying coated with bituminous paint.

1003.3.5 Finished Carpentry

Finished carpentry covers works on flooring, siding and ceiling boards, stairs, cabinets, fabricated woodwork, millwork and trims.

a. Framing lumber shall be select grade, free from defects and where exposed in finished work, shall be selected for color and grain.

b. Joints of framing shall be tenoned, mortised or doweled where suitable, closely fitted and secured with water resistant resins glue. Exterior joints shall be mitered and interior angles coped.

c. Panels shall be fitted allow for contraction or expansion and insure that the panels remain in place without warping, splitting and opening of joints.

d. Plyboard shall be as specified under Section 1003.2.3 unless otherwise indicated on the Plans.

e. Plywood shall be specified under Section 1003.2.4.

f. Exposed edges of plywood or plywood for cabinets shall be provided with select grade hardwood strips, rabbeted as necessary, glued in place and secured with finishing nails. To prevent splitting, hardwood for trims shall be drilled before fastening with nails or screws.

g. Fabricated woodwork shall be done preferably at the shop. It shall be done true to details and profiles indicated on the Plans.

Where set against concrete or masonry, woodwork shall be installed when curing is completed.

h. Exposed wood surfaces shall be free from disfiguring defects such as raised grains, stains, uneven planning, sanding, tool marks and scratches.

ITEM 1016 - WATERPROOFING

1016.1 Description

This Item shall consist of furnishing all waterproofing materials, labor, tools, equipment and other facilities and undertaking the proper installation works required as shown on the Plans and in accordance with this Specification.

1016.2 Material Requirements

1016.2.1 Cement-base Waterproofing

1016.2.1.1 Cement-base waterproofing powder mix shall be cement-base, aggregate type, heavy duty, water-proof coating for reinforced concrete surface and masonry exposed to water. The aggregates are graded and sized so as to mesh perfectly and are selected for purity, hardness, strength and are non-metallic. When mixed with other ingredients are free flowing, water-proof coatings that possesses strength durability and density.

1016.2.1.2 Additive binders shall be of special formulation of acrylic polymers and modifiers in liquid form used as additive with cement-base powder mix that improves adhesion and mechanical properties.

1016.2.1.3 Water shall be clean, clear and potable.

1016.2.2 Membrane Waterproofing

1016.2.2.1 Primer shall be of asphalt cold applied, free from water and other foreign matters, and shall conform to the specifications requirement defined in ASTM 0-41.

1016.2.2.2 Built-up membrane shall be made of smoothly woven fibers that are impervious to acid, heat, and dampness and rotting. It should permit complete penetration of asphalt compound or bituminous coating in the woven glass fiber.

1016.2.2.3 Preformed membrane shall be self-sealing flexible cold applied bituminous sheets bonded to 0.15 mm thick polyethylene film.

1016.2.2.4 Mopping Materials

- a) Type A soft adhesive self-sealing asphalt for structure below ground level.
- b) Type B where asphalt is not exposed on temperature exceeding 51.7 Celsius for structure above ground level.
- c) Type C where asphalt is exposed on vertical surface in direct sunlight or above temperature of 51.7 Celsius structure above ground level.

1016.2.3 Liquid waterproofing alternate material shall be of elastomeric or other substances applied in liquid form and cured to an impervious membrane.

1016.2.3 Hydrolithic Waterproofing

- a) Hydrolithic waterproofing mix shall be of heavy cement-based coating compatible to reinforced concrete wall. It must prevent built-up of water vapor which causes blistering, flaking and peeling of paint films.
- b) Material must thoroughly fill and seal pores and voids that it can be used against water pressure on the interior surface of walls below grade.

1016.3 Construction Requirements

Roof decks, balconies, toilet and bathrooms, gutters, parapet walls and other areas indicated on the plans to be waterproof shall first be rendered with cement-based waterproofing before any type of waterproofing is applied.

1016.3.1 Surface Preparation

1016.3.1.1 Concrete surface to be applied with waterproofing shall be structurally sound, clean and free of dirt, loose mortar particles, paint films, oil, protective coats, efflorescence, laitance, etc.

1016.3.1.2 All defects shall be properly corrected and carefully formed to provide a smooth surface that is free of marks and properly cured prior to application works.

1016.3.1.3 Inside corners where vertical and horizontal structure meet shall be provided with cants measuring 50 mm by 50 mm or rounded at corners a minimum of 50 mm radius.

- a) Concrete slabs shall be properly graded to drain rainwater. Provide a minimum pitch of 1 on 100 satisfactorily drain rainwater freely into the drainage lines, gutters and downspouts.
- b) Drainage connections and weep holes shall be set to permit the free flow of water.
- c) Any expansion and contraction joints shall be cleaned, primed, fitted with a backing rod and caulked with sealant.
- d) Provide reglets of about 40 mm deep by 40 mm wide and 250 mm above floor finish along walls or parapets for the termination of the membrane.

- e) Prepared surfaces shall be cured and kept wet by sprinkling with water at regular intervals for a period of at least three days and allow surface to actually set within seven days.
- f) Ensure that the prepared surface has completely set and all defects repaired.
- g) When there is reasonable doubt as to the presence of moisture in the surface to be applied with membrane expose that same direct to sunlight for another 2 days or heat all suspected area using blow torch.

1016.3.2 Preformed or built-up membrane

1016.3.2.1 Application procedure

- a) Prior to application of membrane concrete surfaces should be sound and cured without the use of curing compound. Apply a coat of concrete neutralizer to remove oil dirt's and other contaminants.
- b) Apply asphalt primer at the rate of one gallon per 100 square feet evenly by spraying or by paint brush.
- c) Application shall be done one direction strip by and overlapping each other to assure uniform thickness.
- d) Allow primer to dry until it is ready to receive next coat or layer as specified in the manufacturing instructional manual.
- e) As soon as primer coating is workable, lay a single layer of preformed or built-up membrane smoothly free from irregularities and folds.
- f) Lay preformed or built up membrane conforming to size and shape of the surface area to be covered.
- g) Carefully lay side and end laps in order to assure an even thickness throughout the whole, surface area to be covered.
- h) When the whole surface area is completely covered apply a single coat of asphalt primer at the rate of 3 to 4 gallons per (100 square feet).
- i) Meshes of treated woven glass fibers shall not be completely closed or sealed by the primer coat, but shall sufficiently open to allow successive mopping of the ply material to seep through.
- j) Cover ply not more than the minimum amount of surfacing necessary to prevent sticking on ply.
- k) After application surface shall be uniformly smooth, free from irregularities folds and knots.
- l) Repeat the procedures until 5 plies have been satisfactorily installed or as many layers required or specified in the plans.
- m) Where weather disturbance interrupt the work and exposing the membrane to moisture remove the layer exposed to moisture and repeat procedure until completion of the process.

1016.3.2.2 Protective Coatings

- a) Where laying of the built-up or preformed membrane conforms with the number of plies required as shown on the plans lay a mixture or sand mastic in the proportion of one part asphalt or bituminous material and four parts coarse screened sand by volume. With a steel trowel at an average of 3 mm thick over the surface of membrane.
- b) Then at the rate of one gallon per (100 square feet) apply aluminum heat reflecting finish thoroughly over the dried sand mastic coating.

1016.3.2.3 Metal Cap Flashing

- a) Provide cap flashing gauge 24 plain G.I. where shown on the Plans.
- b) Where cap flashing is connected to preformed lock in through-wall form upper edge' of cap flashing to engage .in preformed lock. Mallet lock down tight to provide a spring action against base flashing.
- c) Then at the rate of one gallon per (100 square feet) apply aluminum heat reflecting finish thoroughly over the dried sand mastic coating.
- d) Where cap flashing is terminated in raked joints or in prepared masonry or stone reglet fasten flashing with wedge every 12 inches and fill reglet on vertical surfaces continuous with plastic cement and on horizontal surfaces, continuous with molten lead.

1016.3.3 Membrane Waterproofing Cement Topping

- a) Provide concrete cement topping of at least 50 mm thick on the membrane after five days where protective coatings has been applied.
- b) Concrete cement topping should be class "A" with 9 mm pea gravel and preferably provided with 2-way 6 mm dia. temperature steel bars.

1016.3.4 Liquid Waterproofing as Membrane

Before any coat of liquid waterproofing is applied concrete cement surface shall conform to the requirement defined in sub-section 1017.3.1.1.

1016.3.4.1 Application procedure

- a) Prior to application of membrane concrete surfaces should be sound and cured without the use of curing compound. Apply a coat of concrete neutralizer to removed oil, dirt and other contaminants.
- b) Apply a primer coat of elastomeric coating standard of the manufacturer at the rate of 1/3 gallon per 9.28 meter square 100 square feet over the surface area to be applied.
- c) After the primer coat has dried penetrating and sealing the concrete surface areas coated apply 25 dry mills of coating at the rate of one gallon per 100 square meters for 3 coatings on the same concrete surface areas coated with liquid waterproofing.
- d) The concrete surface areas coated shall be allowed to dry in twenty four hours if relative humidity is above 4.44 Celsius.
- e) Liquid waterproofing membrane may be applied by paint brush airless spray, notched trowel, squeegee or roller preferably 20-25 mills maximum thickness each wet coat.

1016.3.4.2 Precaution

- a) Liquid waterproofing membrane should not be applied unless the ambient temperature is 4.44 Celcius or higher and should not proceed during inclement weather condition.
- b) Extra care shall be observed by persons doing the application works especially those that have skin sensitiveness must wear gloves while applying the liquid waterproofing. The liquid water-proofing membrane compound is highly combustible.

1016.3.5 Protection of membrane waterproofing surfaces in general.

- a) Concrete topping in situation where it is desirable to have a bond between membrane waterproofing and topped slab it is recommended that the concrete topping be placed as the membrane dries, usually 48 hours after final coat is applied.
- b) If a bond is not required, the membrane should be protected with asphalt asbestos board or asphalt felt paper such time as topping or concrete covering is applied. Prior to topping or placing concrete covering the membrane shall be inspected and initiate repair work where necessary.
- c) Exposed membrane surfaces at concrete gutters and areas not frequently disturbed may be allowed.
- d) Membrane waterproofing at basement shall be covered and, 'protected' by installing tightly butted asphalt impregnated protection boards with a minimum thickness of 6 mm and preferably 12 mm on horizontal areas.

All projections and pipes must be protected with asbestos cloth approximately 6 mm thick. Install the bituminous paving with extra care to avoid damage, lift or curl the underlying protection boards.

1016.4 Method of Measurement

This Item shall be measured in square meters for areas actually rendered with membrane waterproofing and number of packages for integrally waterproofed areas accepted to the satisfaction of the Engineer.

1016.5 Basis of Payment

The accepted quantities, measured as prescribed in Section 1017.4 shall be paid for at the Contract unit price for integral and membrane waterproofing work which price and payment shall be full compensation for furnishing and applying integral and membrane waterproofing materials including the use of equipment and tools, labor and incidentals necessary to complete the work.

Pay Item	Description	Unit of Number Measurement
1016 (a)	Cement-base waterproofing	m ²
1016 (b)	Liquid waterproofing	m ²
1016 (c) membrane	Built-up and Preformed	m ²

ITEM 1027 - CEMENT PLASTER FINISH

1027.1 Description

This Item shall consist of furnishing all cement plaster materials, labor, tools and equipment required in undertaking cement plaster finish as shown on the Plans and in accordance with this Specification.

1027.2 Material Requirements

Manufactured materials shall be delivered in the manufacturer's original unbroken packages or containers which are labelled plainly with the manufacturer's name and trademark.

1027.2.1 Cement

Portland cement shall conform with the requirements as defined in Item 700, Hydraulic Cement.

1027.2.2 Hydrated Lime

Hydrated lime shall conform with the requirements as defined in item 701, Hydrated Lime.

1027.2.3 Fine Aggregates

Fine aggregates shall be clean, washed sharp river sand and free from dirt, clay, organic matter or other deleterious substances. Sand derived from crushed gravel or stone may be used with the Engineer's approval but in no case shall such sand be derived from stone unsuitable for use as coarse aggregates.

1027.3 Construction Requirements

1027.3.1 Mixture

- a) Mortar mixture for brown coat shall be freshly prepared and uniformly mixed in the proportion by volume of one part Portland Cement, three (3) parts sand and one fourth (1/4) part hydrated lime.
- b) Finish coat shall be pure Portland Cement properly graded conforming to the requirements of Item 700, Hydraulic Cement and mixed with water to approved consistency and plasticity.

1027.3.2 Surface Preparation

- a) After removals of formworks reinforced concrete surfaces shall be roughened to improve adhesion of cement plaster.
- b) Surfaces to receive cement plaster shall be cleaned of all projections, dust, loose particles, grease and bond breakers. Before any application of brown coat is commenced all surfaces that are to be plastered shall be wetted thoroughly with clean water to produce a uniformly moist condition.

1027.3.3 Application

- a) Brown coat mortar mix shall be applied with sufficient pressure starting from the lower portion of the surface to fill the grooves and to prevent air pockets in the reinforced concrete/masonry work and avoid mortar mix drooping. The brown coat shall be lightly broomed/ or scratch before surface has properly set and allowed to cure.
- b) Finish coat shall not be applied until after the brown coat has seasoned for seven days and corrective measures had been done by the Contractor on surfaces that are defective. Just before the application of the finish coat, the brown coat surface shall be evenly moistened with potable water. Finish coat shall be floated first to a true and even surface, then troweled in a manner that will force the mixture to penetrate into the brown coat. Surfaces applied with finish coat shall then be smooth with paper in a circular motion to remove trowel marks, checks and blemishes. All cement plaster finish shall be 10 mm thick minimum on vertical concrete and/or masonry walls.

Wherever indicated on the Plans to be "Simulated Red Brick Finish", the Contractor shall render brick design on plaster surface before brown coat had properly set and then allowed to dry. Cement plaster shall not be applied directly to:

- a) Concrete or masonry surface that had been coated with bituminous compound and,
- b) Surfaces that had been painted and previously plastered.

1027.3.4 Workmanship

Cement plaster finish shall be true to details and plumb. Finish surface shall have no visible junction marks where one (1) Day's work adjoins the other. Where directed by the Engineer or as shown on the Plans vertical and horizontal groove joints shall be 25 mm wide and 10 mm deep.

1027.4 Method of Measurement

All cement plaster finish shall be measured in square meters or part thereof for work actually completed in the building.

1027.5 Basis of Payment

The work quantified and determined as provided in the Bill of Quantities shall be paid for at the Contract Unit Price which price constitutes full compensation including labor, materials, tools and equipment and incidentals necessary to complete this Item.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
1027 (a)	Cement plaster finish	m ²
1027 (b)	Simulated red bricks.pn142	m ²

Exposed surfaces shall be machine or hand sanded to an even smooth surface, ready for finish.

TEM 1032 – PAINTING WORKS

1032.1 Description

This Item shall consist of furnishing all paint materials, varnish and other related products, labor, tools, equipment and plant required in undertaking the proper application of painting, varnishing and related works indicated on the Plans and in accordance with this Specification.

1032.2 Material Requirements

1032.2.1 Paint Materials

All types of paint material, varnish and other related product shall be subject to random test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology. (Use the following approved and tested brand name: Boysen, Davies, Dutch Boy, Fuller 0 Brien, or any approved equal).

1032.2.2 Tinting Colors

Tinting colors shall be first grade quality, pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.

1032.2.3 Concrete Neutralizer

Concrete neutralizer shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.

1032.2.4 Silicon Water Repellant

Silicon water repellant shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.

1032.2.5 Patching Compound

Patching compound shall be fine powder type material like calcium silicate that can be mixed into putty consistency, with oil base primers and paints to fill minor surface dents and imperfections.

1032.2.6 Varnish

Varnish shall be a homogeneous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.

1032.2.7 Lacquer

Lacquer shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvents are acetates, alcohols and ketones. Although lacquers were generally based on nitrocellulose, manufacturers currently use, vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

1032.2.8 Shellac

Shellac shall be a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades.

1032.2.9 Sanding Sealer

Sanding sealer shall be quick drying lacquer, formulated to provide quick dry, good holdout of succeeding coats, and containing sanding agents such as zinc stearate to allow dry sanding of sealer.

1032.2.10 Glazing Putty

Glazing putty shall be alkyd-type product for filling minor surface unevenness.

1032.2.11 Natural Wood Paste Filler

Wood paste filler shall be quality filler for filling and sealing open grain of interior wood. It shall produce a level finish for following coats of paint varnish/lacquer and other related products.

1032.2.12 Schedule

Exterior

- a) Plain cement plastered finish to be painted -3 coats Acrylic base masonry paint
- b) Concrete exposed aggregate and/or tool finish -1 coat water repellent
- c) Ferrous metal -1 coat primer and 2 coats enamel paint
- d) Galvanized metal -1 coat zinc chromate primer and 2 coats portland cement paint
- e) Wood painted finish -3 coats oil based paint
- f) Wood varnished finish - varnish water repellent

Interior

- a) Plain cement plastered finish to be painted - 2 coats acrylic base masonry paint
- b) Concrete exposed aggregate and/or tool finish - clean surface
- c) Ferrous metal -1 coat primer and 2 coats enamel paint
- d) Woodwork sea-mist -3 coats of 3 parts thinner 1 part lacquer
- e) Woodwork varnish - 1st coat, of one part sanding sealer to one part solvent 2nd coat of 2/3 sanding sealer to 1/3 solvent
- f) Woodwork painted - 3 coats of oil base paint finish 109
- g) Ceiling boards textured finish -1 coat oil based paint allow to dry then patch surfaces unevenness and apply textured paint coat

1032.3 Construction Requirements

The Contractor prior to commencement of the painting, varnishing and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.

1032.3.1 Surface Preparation

All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knotholes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.

Interior woodworks shall be sandpapered between coats. Cracks, holes or imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces. Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).

Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash unprimed galvanized metal with etching solution and allow it to dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer. In addition the Contractor shall undertake the following:

1. Voids, cracks, nick etc. will be repaired with proper patching material and finished flush with surrounding surfaces.
2. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.

3. Painting and varnishing works shall not be commenced when it is too hot or cold.
4. Allow appropriate ventilation during application and drying period.
5. All hardware will be fitted and removed or protected prior to painting and varnishing works.

1032.3.2 Application

Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall flow out after application of paint.

Paints made for application by roller must be similar to brushing paint. It must be nonstick when thinned to spraying viscosity so that it will break up easily into droplets.

Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. These procedures change the required properties of the paint.

1032.3.3 Mixing and Thinning

At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions, but not in excess of 1 pint of suitable thinner per gallon of the paint.

1032.3.4 Storage

All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept .

neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

1032.3.5 Cleaning

All cloths and cotton waste which constitute fire hazards shall be placed in metal containers or destroyed at the end of daily works. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

1032.3.6 Workmanship in General

- a) All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- b) All coats shall be thoroughly dry before the succeeding coat is applied.
- c) Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the owner.
- d) Where surface is not in proper condition to receive the coat the Engineer shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by , the Engineer.
- e) Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting varnishing and related work operations and re-installed after completion of the work.

1032.3.7 Procedure for Sea-Mist Finish

- a) Depress wood grain by steel brush and sand surface lightly.
- b) Apply sanding sealer.
- c) Apply two coats of industrial lacquer paint.
- d) Spray last coat of industrial lacquer paint mixed with sanding sealer.
- e) Apply wood paste filler thinned with turpentine or paint thinner into the wood surface.
- f) Wipe off wood paste filler immediately.
- g) Spray flat or gloss lacquer whichever is specified.

1032.3.8 Procedure for Varnish Finish

- a) Sand surface thoroughly.
- b) Putty all cracks and other wood imperfections with wood paste filler.
- c) Apply oil stain.
- d) Apply lacquer sanding sealer.
- e) Sand surface along the grain.
- f) Spray three (3) coats of clear dead flat lacquer.
- g) Polish surface coated using cloth pad.
- h) Spray gloss lacquer or flat lacquer whichever is desired or specified.

1032.3.9 Procedure for Ducco Finish

- a) Sand surface thoroughly.
- b) Apply primer surface white or gray by brush or spray.
- c) Apply lacquer spot putty in thin coat. Allow each coat for become thoroughly dry before applying next coat.
- d) Apply primer surfaces and then allow drying in two (2) hours before applying the next coat.
- e) Apply a coat of flat tone semi-gloss enamel as per color scheme submitted and approved by the Engineer.

1032.4 Method of Measurement

The areas of concrete, wood and metal surfaces applied with varnish, paint and other related coating materials shall be measured in square meters as desired and accepted to the satisfaction of the Engineer.

1032.5 Basis of Payment

The accepted work shall be paid at the unit bid price, which price and payment constitute full compensation for furnishing all materials, labor, equipment, tools and other incidental necessary to complete this Item.

Payment will made under:

Pay Item Number	Description	Unit of Measurement
1032 (a)	Painting works	m ²
1032 (b)	Varnishing	m ²
1032 (c)	Sea-mist Finish	m ²
1032 (d)	Ducco Finish	m ²

1032 (e)

Texture Finish

m²

ITEM 1600 - EXCAVATION

1600.1 Description

This item shall consist of the necessary excavation for removal of all foundation of materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the work.

1600.2 Construction Requirements

1600.2.1 General

The removal of said materials shall conform to the lines and grades shown on the approved Plans and Specifications. Unless otherwise provided, the entire construction site shall be stripped of all vegetation and debris and such materials shall be removed from the site prior to performing any excavation. The Contractor shall furnish, place and maintain all supports and shoring that may be required for the sides of the excavation, and all pumping, ditching or other approved measures for the removal or exclusion of water, including taking care of storm water and waste water reaching the site of work from any source so as to prevent damage to the work and adjoining property.

The walls and faces of all excavation in which workers are exposed to danger from unstable ground shall be guarded by means of shoring system, sloping of the excavation, or some other acceptable methods.

The Contractor shall furnish, install and maintain such seething, bracing, etc., as may be necessary to protect the workers and to prevent any movement of earth which could injure or delay the work or endanger adjacent structures. In excavation which workers may be required to enter, excavated or other materials shall be effectively stored and retained at least 600 mm or more from the edge of the excavation and trenching operations shall conform to any and all national, provincial and local safety requirements.

1600.2.2 Excavation Beneath Proposed Structures

Unless otherwise specified for a particular structure or ordered by the Engineer excavation shall be carried to the grade of the bottom of the footing or slab. Where shown or ordered, areas beneath proposed structures shall be over-excavated. After the required excavation or over-excavation has been completed, the exposed surface shall be scarified to the depth of 150 mm brought to optimum moisture content and rolled with heavy compaction equipment to one hundred percent (100%) of maximum density.

1600.2.3 Excavation Beneath Areas to be Paved

Excavation under areas to be paved shall extend to the bottom of the aggregate base, if such base is called for; otherwise it shall extend to the bottom of paving. After the required excavation has been completed, the exposed surface shall be scarified, brought to optimum moisture content, and rolled with heavy compaction equipment to one hundred percent (100%) of maximum density.

1600.2.4 Pipeline Trench Excavation

Unless otherwise shown on the approved Plans, and Specifications or ordered by the Engineer, excavation for pipeline shall be open-cut trenches. The bottom of the trench, including any

shoring shall have a minimum width equal to the outside diameter of the pipe plus 300 mm and a maximum width equal to the outside diameter of the pipe plus 600 mm.

except when otherwise shown or ordered by the designated/assigned Engineer, the bottom of the trench shall be excavated uniformly to the grade of the bottom of the pipe. The trench bottom shall be given a final trim using a string line for establishing grade, such that each pipe section when first laid will be wholly in contact with the ground or bedding along the extreme bottom of the pipe. Rounding out the trench to form a cradle shall not be required. The maximum amount of open trench permitted at anyone time and in one location shall be 300 metres or the length necessary to accommodate the number of pipes installed in one day, whichever is greater. Barricades and warning lights satisfactory to the designated/assigned Engineer shall be provided and maintain for all trenches left open overnight except at intersections and driveways in which case heavy steel plates, adequately braced bridges or other type of crossing capable of supporting vehicular traffic shall be furnished as directed by the Engineer.

1600.2.5 Excavation in Lawn Areas

Where pipelines excavation occurs in lawn areas, the sod shall be carefully removed and stockpiled to preserve it for replacement. Excavated material shall be placed on the lawn provided a drop cloth or other suitable method is employed to protect the lawn from damage. The lawn shall not remain covered for more than 72 hours. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced in a manner so as to restore the lawn as near as possible to its original condition.

1600.2.6 Rock Excavation

Rock excavation shall include removal and disposal of the following:

(1) all boulders measuring 0.25 cubic metre or more in volume: (2) All rock material in ledges, bedding deposits and unstratified masses which cannot be removed without systematic drilling and blasting,

1600.2.7 Excavation Beneath Proposed Concrete Reservoir

After the reservoir area has been stripped of all vegetation and debris.

as specified in subsection (1700.2.1), lawn and top soil from the top 600 mm of excavated soil shall be removed and stockpiled for possible later use as fill on or around the reservoir and for miscellaneous top soil.

Excavation under the reservoir shall extend to the bottom of the draindock layer. After such excavation had been completed, the exposed surface shall be rolled with heavy equipment to provide a reasonably smooth surface for placement of draindock.

1600.3 Method of Measurement

The quantity to be paid for shall be the volume of the materials excavated in cubic metre calculated by multiplying the horizontal area of the bottom of the structure or open-cut trench by the average depth. The average depth shall be calculated from the finished surface of the grade shown on the drawing or the original ground level, whichever is the lowest.

1600.4 Basis of Payment

Payment for all work under this item shall be made at the contract.

unit price per cubic metre for earthwork which price and payment shall be full compensation for furnishing all materials, labor, equipment, tools and incidentals necessary to complete all work.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
1600 (1) Proposed Structures	Excavation Beneath	Cubic metre
(2) Excavation	Pipeline Trench	Cubic metre

ITEM 1601 - BACKFILL AND FILL

1601.1 Description

This item shall consist of all operations required to replace excavated and unsuitable materials to fill up depression to grade or to built up low areas in accordance with the approved Plans and Specifications.

1601.2 Material Requirements

The selected materials shall be free from grass, roots, brush, or other vegetation, or rocks having maximum dimension larger than 150 mm. Materials placed within 150 mm of any structure Or pipe shall be free from rocks or unbroken masses or earthly materials having maximum dimension larger than 75 mm.

1601.3 Construction Requirements

Backfill materials shall be laid in horizontal layers, not more than 200 mm in thickness and compacted to 100 percent of maximum density and to be carried to the level of the surrounding ground or to the lines and grades as shown on the drawings.

Backfill shall not be placed around or upon any structure until the structure has attained sufficient strength to withstand the loads imposed. Special precaution shall be taken to prevent any wedging action against completed structures or facilities. In the course of filling, any sloped surface in the excavation around structure shall be "cut into" horizontally with every layer placed, in order to eliminate any wedge action.

Where the use of power driven compacting equipment would not be practical, layers or materials shall be compacted by any other method which will produce the requirement for compaction.

1601.4 Method of Measurement

The quantity of backfill and fill materials to be paid for under this item shall be the volume which were actually placed and accepted and computed by the average end-area multiplied by total length.

1601.5 Basis of Payment

Payment for all work under this item shall be paid at the contract price per cubic metre for Backfill and Fill, which price and payment shall constitute full compensation for furnishing,

hauling, depositing, compacting and leveling, tools and other incidentals necessary to complete the item of work.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
1601	Fill and Backfill	Cubic metre

ITEM 1602 -INSTALLATION OF PIPELINE

1602.1 Description

This item shall consist of furnishing and installation of all pipes, fittings, closure pieces, bolts, nuts, gaskets, jointings materials and appurtenances ;', as shown and specified on the drawings, and as required by the designated! assigned Engineer for a complete and workable piping system.

1602.2 Material Requirements

1602.2.1 Mortar Lined and Enamel or Mortar Coated Steel Pipe

1. General - Mortar lined and enamel or mortar coated steel pipe materials and method of manufacture of straight pipe and pipe specials shall conform to Federal Specification SS-P385a dated January 31, 1964 and Amendment-1 dated February 27, 1968 (herein After referred to as "FED SPEC"), subject to the exception and supplemental requirements contained in the following subsections.

The pipe, of the diameter and class shown, shall be furnished complete with rubber gaskets if required and all specials and bends shall be provided as shown. For pipe 350 mm in diameter and larger, the nominal diameter specified or shown shall be the inside diameter after lining. Pipe smaller than 350 mm in diameter may be furnished in standard outside diameters. Plate thickness specified or shown are nominal thickness. Shop drawings of all pipe and specials shall also be furnished.

2. Cement - cement shall conform to ASTM C150 and shall be type 1 for pipe linings and coatings.

3. Aggregate- aggregates shall conform to ASTM C33 to fine aggregates.

4. Cylinder Material - cylinder material shall be fabricated from hot rolled carbon steel sheets or plates conforming to ASTM A570 Grades C,D or E, ASTM A283 Grade D; steel pipe conforming to ASTM A 139 Grade B: or if approved by the designated/assigned Engineer, high strength low-alloy steel conforming to ASTM A572 Grade 42.

5. Rubber Gasket - where rubber gaskets are provided, they shall be continuous ring type, made of special composition rubber. The compound shall be of first grade natural crude, synthetic rubber or a suitable combination thereof. The gasket shall be so formed and cured as to be dense, homogenous, and have a smooth surface free of blisters, pit and other imperfections. The gasket shall be of sufficient volume to fill substantially the recess provided when the joint is assembled and shall be the sole element depended upon to make the joint water-tight. Gaskets shall be furnished with the pipe.

The compound shall conform to the physical requirements listed below:

PHYSICAL REQUIREMENT	VALUE	FED.TEST METHOD STD. No.601
Tensile Strength, Min. Natural Rubber	15.85 MPa	4111
Synthetic Rubber and Combination	14.47 MPa	4111
Ultimate Elongation, percent min. Natural	500%	4121
Synthetic & Combination	425%	4121
Shore Durometer, Type A	40-65%	3021
Compression Set, percent of Original Deflection Max.	20%	3111
Tensile strength after aging percent of original tensile strength, min. (oxygen pressure test or air heat test)	80%	7111* 7221**

* Time 48 hours temperature 70 degrees Centigrade (158 degrees F) 2.0 MPa

** 96 hours at 70 degrees Centigrade (156 degrees F)

6. Welded Joints - where welded joints are provided, weld bell type joints maybe used, or the .bell may be cut back, or filler rod added so as to permit field weld between the bell and spigot joint rings.

7. Lining - Except where otherwise specified or shown, lining thickness shall be as follows, with a tolerance of plus or minus twenty-five percent (25%).

Nominal Pipe Diameter (mm)	Lining Thickness (mm)
under 300	6.0
300 to 400	13.0
over 400	19.0

8. Coating - The coating of Steel Pipe shall be of coal tar enamel or cement mortar.

The pipe smaller than 450 mm diameter shall be factory coated with coal tar enamel and bonded asbestos felt wrap as specified in AWWA Standard for Coal Tar Protective Coatings and Linings for Steel Water Pipelines-Enamel and Tape-Hot Applied (AWWA C-203).

Pipe 450 mm diameter and larger, shall be factory coated with coal-tar enamel, fibrous glass mat and bonded asbestos felt wrap as specified in said AWWA Standard.

Coating materials and method of application shall conform to said AWWA Standard except where modified.

Except where otherwise specified or shown, coating thickness shall be 25 mm minimum. Mortar for pipe coating shall consist of one (1) part cement to not more than three (3) parts sand by weight.

9. Curing

The curing periods specified in the Federal Specification are minimum periods. Curing of the Lining shall continue until the exterior coating is applied. The ends of the pipe shall be sealed with heavy plastic sheet during and between placement of the coating and the time the pipe is lowered into the trench. If pipe is steam-cured, recorder charts showing temperature and duration of curing period.

10. Compressive Strength of Mortar

Cylinder shall be molded and tested in accordance with ASTM C39 or C109.

1602.2.2 Cast Iron Water Pipe

Bell and spigot cast iron pipe shall conform to the requirements of the following:

1. "Cast Iron Pipe Centrifugally Cast in Metal Molds for Water or other Liquids" (AWWA C-106) or "Cast Iron Pipe Centrifugally Cast in SandLined Molds for Water or other Liquids" (AWWA C-108), and as indicated in the Bid Schedules or
2. "ISO Recommendation R-13, Cast Iron Pipes, Special Castings and Cast Iron Parts for Pressure Main Lines." The pipe shall be Class A, however, the hydrostatic test pressure shall be 350 MPa for all sizes.

1602.2.3 Asbestos - Cement Water Pipe

Asbestos-cement water pipe shall conform to the latest edition of the following specifications:

1. International Organization for Standardization (ISO) Recommendation R-160 "Asbestos-Cement Pressure Pipe". Subject to the following additional requirements:

- a. Classification Series II, Class 2.45 MPa
- b. Internal Hydraulic Pressure Test: A test pressure of 2.45 MPa shall be applied to each length of pipe. The test shall be performed in accordance with ISO 160. clause 2.6.1 except that the application and maintenance of the test pressure may be in accordance with AWWA C-400. Section 5.2.2.1, at the manufacturer's option.
- c. Longitudinal Bending Test: A longitudinal bending test shall be performed on each length of the pipe in sizes up to 200 mm diameter when the length exceed 3.0 m. The test shall be performed in accordance with the requirements of AWWA C400 Section 5.2.3 Class 100.
- d. Transverse Crushing Test: A transverse crushing test shall be performed as specified in ISO R160. Clause 2.6.3. The number of test shall as specified in ISO clause 4.2.3.
- e. Acceptance Test: The consignment shall be delivered with acceptance tests. as specified in ISO R160 Section 4, subject to the additional requirements included herein.
- f. Manufacturer's Certificate: The manufacturer shall supply the owner with a certificate showing that the pipe has been tested in accordance with. and satisfies the requirements of the specification as modified herein.
- g. Pipe Joints: The tolerance on dimensions of pipe and couplings.

as well as the dimensions and specifications of rubber jointing rings, shall be such that an Internal hydraulic pressure of 2.45 MPa can be maintained without leakage when the pipes are set at the maximum angular deviation indicated by the manufacturer of the pipe.

1602.2.4 PVC (Polyvinyl Chloride) Pipe

1. Pipe shall conform to the requirements of "AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe", 100 mm through 300 mm diameter (AWWA C-900) and shall be pressure class 100 or 150 where shown on the drawings and as indicated in the Bid Schedule. The pipe shall have steel pipe equivalent or cast iron equivalent outside dimensions and furnished with rubber ring gasket joints.

Alternate outside diameter and wall thickness shown in the tabulation will be allowed for the specified pressure class.

1602.2.5 Polyethylene (PE) Plastic Pipe

1. Polyethylene pipe shall be manufactured from Type IV, Class C, Grade P34 extrusion compound as defined by ASTM 01248 with a hydrostatic design stress of 4.3 MPa. Alternate polyethylene pipe extrusion compound PE 3408 according to the Plastic Pipe Institute (PPI) with a hydrostatic design stress of 5.50 MPa may be used. All compound used shall be virgin plastic. Clean rework material from the manufacturer's own pipe production may be used so long as the original was virgin material and of the same type, class and grade as required above. The pipe shall meet the requirements of the National Sanitation Foundation for potable water use as tested by the National Institute of Science and Technology (NIST) or other testing laboratories and shall be made from nontoxic, non-lead based plasticiser approved by the Project Engineer.

2. Pipe dimension when measured to the methods as described in ASTM 02122, polyethylene pipe shall conform to either of the following dimension depending on the type of extrusion compound used as stipulated above:

Extrusion Compound, Type IV, Class C,
Grade P34 (according to ASTM 01248)

Nominal Size (mm)	Outside Diameter (mm)	Wall Thickness (min.)	Thickness mm (max.)
75	90	8.18	9.30
100	110	10.00	11.36
150	160	14.55	16.53
200	225	20.45	23.34

3. All polyethylene Pipes shall be rated for use with water at 23 degrees C and at a minimum working pressure of 1.10 MPa.

4. All PE pipes shall be clearly marked at intervals not more than 1.0 linear metre with nominal size, type of material, manufacturer's trade name and production code.

1602.3 Construction Requirements

1602.3.1 Mortar Lines and Enamel or Mortar Coated Steel Pipe

1. Unless otherwise provided, the Contractor shall furnish and install all pipes, specials, fittings, closures, pieces, valves, supports, bolts, nuts, gaskets, jointing materials and all other appurtenances as shown and as required to provide a complete and workable installation. Where

pipe support details are shown. the support shall conform thereto and shall be placed as Indicated; provided, that the support for all exposed piping shall be complete and adequate regardless of whether or not supporting devices are specifically shown. Concrete thrust blocks. anchor blocks or welded joints shall be provided at all junctions, changes in direction exceeding 11-1/2 degrees or where otherwise shown. At all times when the work of installing pipe is not in progress, all openings into the pipe and at the ends of the pipe in trenches or structures shall be kept tightly closed to prevent entrance of animals and foreign materials. The Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damages due to this cause and shall at his own expense restore and replace the pipe to its specified condition and grade if it is displaced due to floating. The Contractor shall maintain the inside of the pipe free from foreign materials and in a clean and sanitary condition until its acceptance by the Owner.

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

1602.3.2 Cast Iron Water Pipe

Cast iron and fitting shall be lined with cement mortar in accordance with the requirement of the "Standard for Installation of Cast Iron Water Mains" (AWWA C-600).

1602.3.3 Asbestos - Cement Water Pipe

Asbestos-cement pipe shall be installed in accordance with the "Standard for Installation of Asbestos-Cement Water Pipe" (AWWA C603), except that the pipe shall not be laid using earth mounds.

Prior to installation, the asbestos-cement pipe and couplings and all rubber rings shall be inspected for damages and defects in materials and workmanship. All damaged or defective materials shall be rejected and removed from the jobsite.

Joints between asbestos-cement pipe to cast-iron valves and fittings shall be sealed with rubber ring gaskets. After assembling the joint, the position of the rubber ring gaskets shall be located at even distance from the face of the valve or fitting, for the full circumference of the pipe.

1602.3.4 PVC (Polyvinyl Chloride) Pipe

After a section of a pipe has been lowered into the prepared trench and immediately before joining the pipe, the ends of the pipe to be joined shall be cleaned, and the rubber gasket lubricated, with a vegetable compound soap all in accordance with the pipe manufacturer's instructions. Assembly of the pipe length shall be in accordance with the recommendation of the manufacturer of the type of the joint use, All special tools and appliances required for joining the pipe shall be provided by the Contractor. When cutting or machining of the pipe is necessary, only tools and methods recommended by the pipe manufacturer and approved by the Engineer shall be employed.

1602.3.5 PE (Polyethelene) Plastic Pipe

All PE pipes when supplied under the specification shall be joined employing either of the following methods:

Butt-Fusion

When pipe supplied under this specification 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 ASTM D-2657.
- b. General Procedure - The following procedures shall be followed when making butt-fusion joint:
 1. Wipe each pipe-end-clean, inside and outside to remove dirt, water, grease and other foreign material.
 2. Square the end of each pipe section to be fused using a fusing tool. Remove cuttings and burns 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 pipes ends in contact and allow pipe to heat and soften until a bead of molten plastic roll 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 1.50 mm on all sizes up to 75 mm. On 75 mm to 150 mm heat to 5.0 mm. Softening can be judged by the appearance of the pipe end as the material softens. Both surfaces of the heater plate shall be cleaned and the temperature maintained at 246 degrees C to 260 degrees C (475 degrees F to 500 degrees F.)
 5. Carefully remove the pipe ends from the heater plate and remove the plate. If the softened material sticks to the heater plate, discontinue the joint. Clean heater plate, resquare pipe end and start over.
 6. Bring the heated pipe ends together with the specified pressure to form a uniform double head about 3.0 mm to 5.0 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 non-porous appearance. If the joint appears faulty, cut the joint out and repeat the procedure.

1602.4 Method of Measurement

The quantity to be paid under this item shall be the length in metres of pipes in place completed and accepted, measured from end to end of the pipeline~

1602.5 Basis of Payment

The quantity determined as provided above, shall be paid for or the contract price per metre for pipe actually installed and payment shall constitute full compensation for furnishing and installation of all pipes, fittings, closure pieces, bolts, nuts, gaskets, jointing materials and for all labor, equipment, tools and incidentals necessary to complete the work.

Pay Item No. and Name	Unit of Measurement
1602-1 Mortar lined and coated steel pipe	enamel Mortar
1602-2 Cast Iron Water pipe	metre
1602-3 Asbestos-cement water pipe	metre
1602-4 PVC Polyvinyl	metre

Chloride pipe
1602-5 Polyethelene (PE)
Plastic pipe

metre

Section VII. Drawings

[Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section, or annexed in a separate folder.]

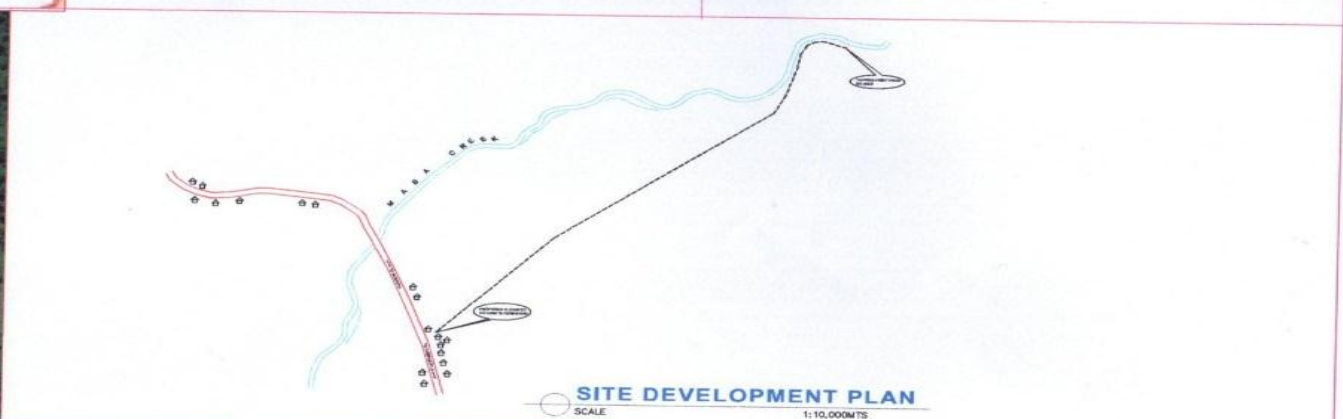
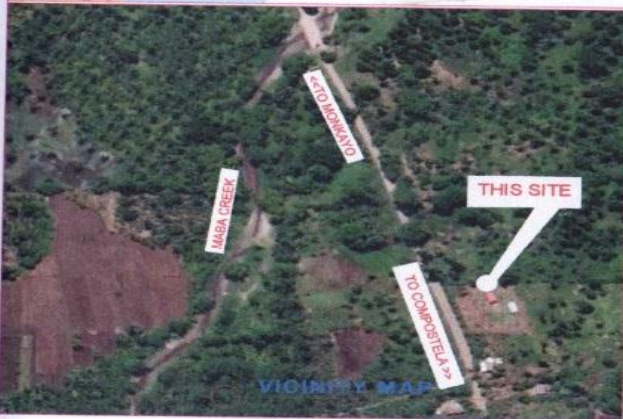







TABLE OF CONTENTS

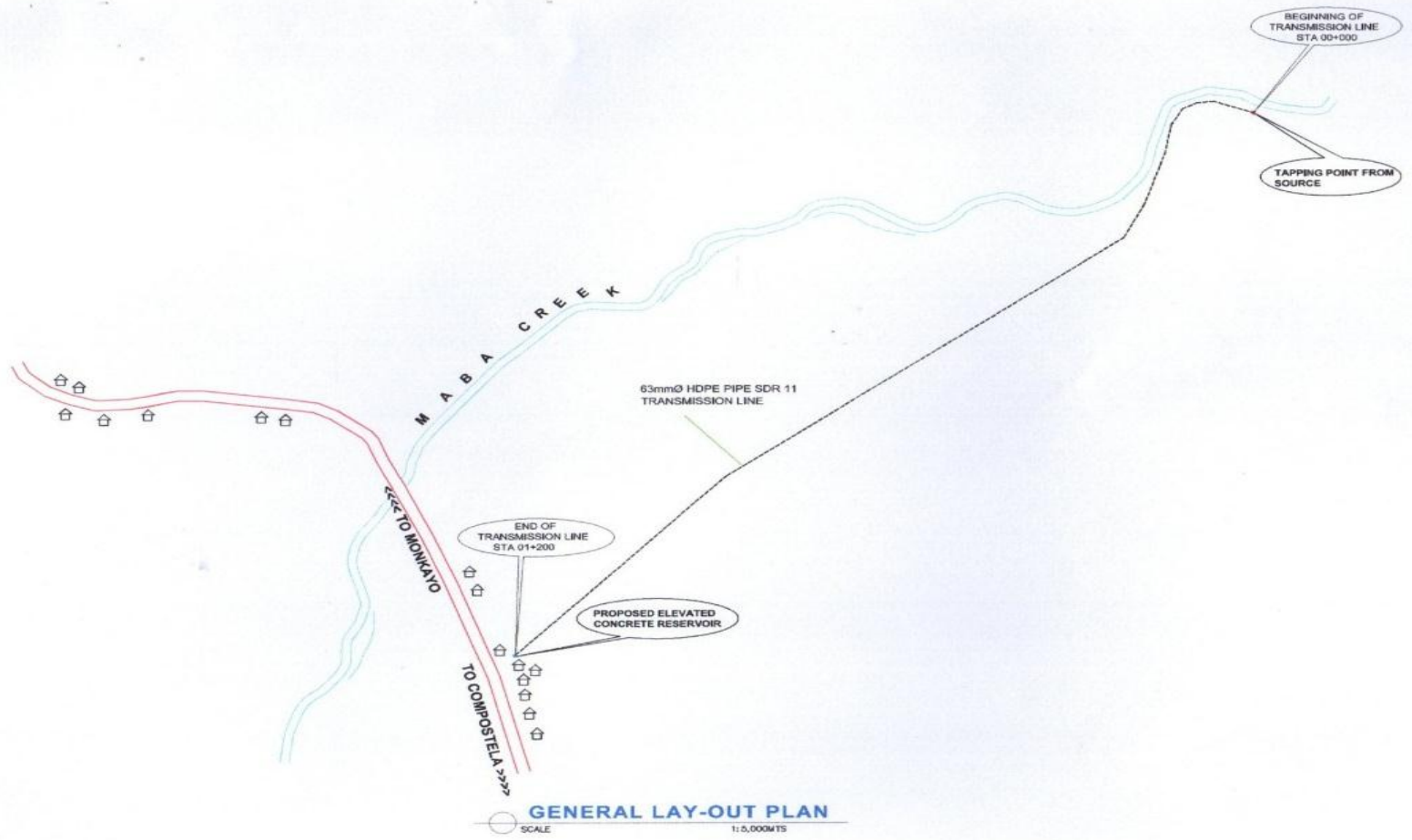
DWG.No.	TITLE
1	LOCATION MAP, SITE DEVELOPMENT PLAN, TABLE OF CONTENTS, NOTES AND SPECIFICATIONS
2	GENERAL LAY-OUT PLAN
3	RIVER CROSSING STRUCTURE DETAIL
4	ELEVATED CONCRETE RESERVOIR DET.
5	ELEVATED CONCRETE RESERVOIR DET.
6	ELEVATED CONCRETE RESERVOIR DET.
7	ELEVATED CONCRETE RESERVOIR DET.

NOTES AND SPECIFICATIONS:

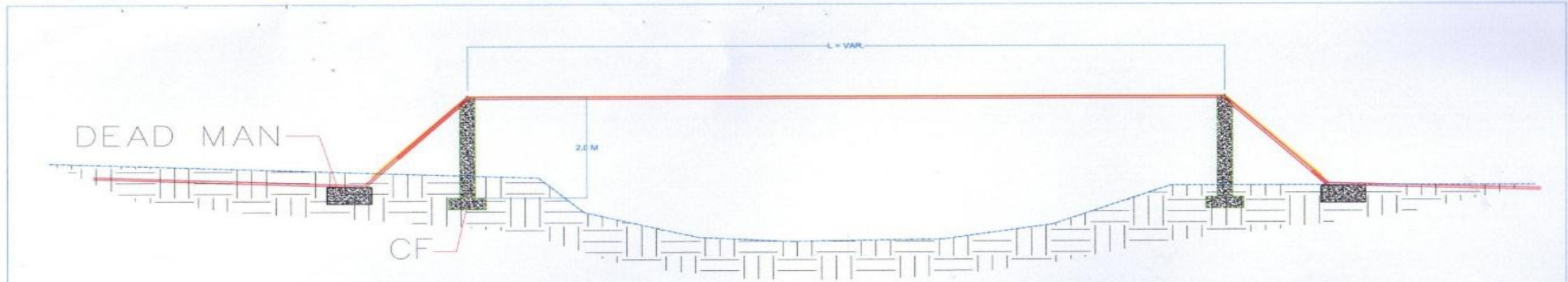
- 1.) CONCRETE WORKS FOR ELEVATED CONCRETE TANK SHALL BE CLASS-A OR EQUIVALENT TO 3000 PSI.
- 2.) USE HI-DENSITY PE PIPES (PREMIUM QUALITY HDPE) SDR 13.5 FOR MAINLINES & DISTRIBUTION LINES WITH EQUIVALENT PRESSURE RATE CAPACITY OF 160 PSI.
- 3.) USE HDPE SDR-11 PE PIPE FOR ALL PIPELINES AND FITTINGS UNLESS SPECIFIED.
- 4.) USE US BRAND OR EQUIVALENT FOR GATE VALVES CONTROL VALVES UNLESS SPECIFIED.
- 5.) STEEL REINFORCEMENT: $f_y = 40,000$ psi.
- 6.) USE GJ SCHEDULE 40 FOR PIPES AND FITTINGS ACCESSORIES.
- 7.) ALL DIMENSION ARE IN MILLIMETERS (MM) UNLESS OTHERWISE



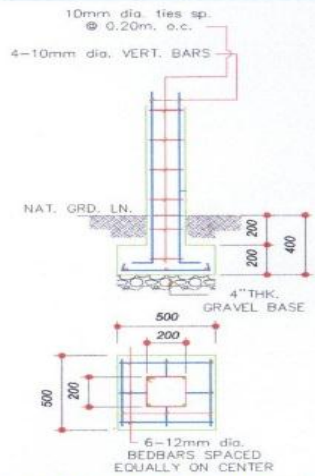
 REPUBLIC OF THE PHILIPPINES PROVINCE OF COMPOSTELA MUNICIPALITY OF COMPOSTELA OFFICE OF THE MUNICIPAL ENGINEER AND BUILDING OFFICIAL	PROJECT TITLE: CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON	PREPARED BY:  ANTHONY M. VELOZ Instrument Man	CHECKED & REVIEWED BY:  LEONILO D. CAVAN, CE Engineer III	RECOMMENDING APPROVAL:  FELICITA R. DETROS, CE Municipal Engineer	APPROVED BY:  LEMA POBLETE-BOLO, CPA Municipal Mayor	SHEET CONTENTS: LOCATION PLAN VICINITY MAP SITE DEVELOPMENT PLAN TABLE OF CONTENTS NOTES AND SPECIFICATIONS	SHEET NO. <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="display: flex; flex-direction: column; align-items: center; justify-content: center;"> 1 <hr style="width: 10px;"/> 7 </div> </div>
	Location: PUROK 4-A, MANGAYON, COMPOSTELA, DAVAO DE ORO						



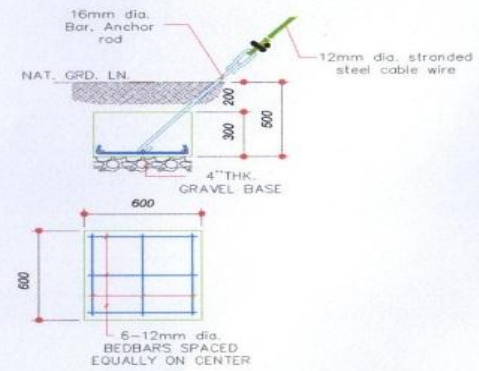
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	<p>Location: PUROK 4-A, MANGAYON, COMPOSTELA, DAVAO DE ORO</p>						



RIVER CROSSING SECTION
SCALE 1:75 MTS



DETAIL OF COLUMN FOOTING/COLUMN
SCALE 1:25 MTS



DETAIL OF ANCHOR BLOCK (DEAD MAN)
SCALE 1:25 MTS



REPUBLIC OF THE PHILIPPINES
PROVINCE OF COMPOSTELA
MUNICIPALITY OF COMPOSTELA
OFFICE OF THE MUNICIPAL ENGINEER
AND BUILDING OFFICIAL

PROJECT TITLE:
CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN
SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON
Location:
PUROK 4-A, MANGAYON, COMPOSTELA,
DAVAO DE ORO

PREPARED BY:
Anthony M. Velazquez
ANTHONY M. VELAZQUEZ
Instrument Man

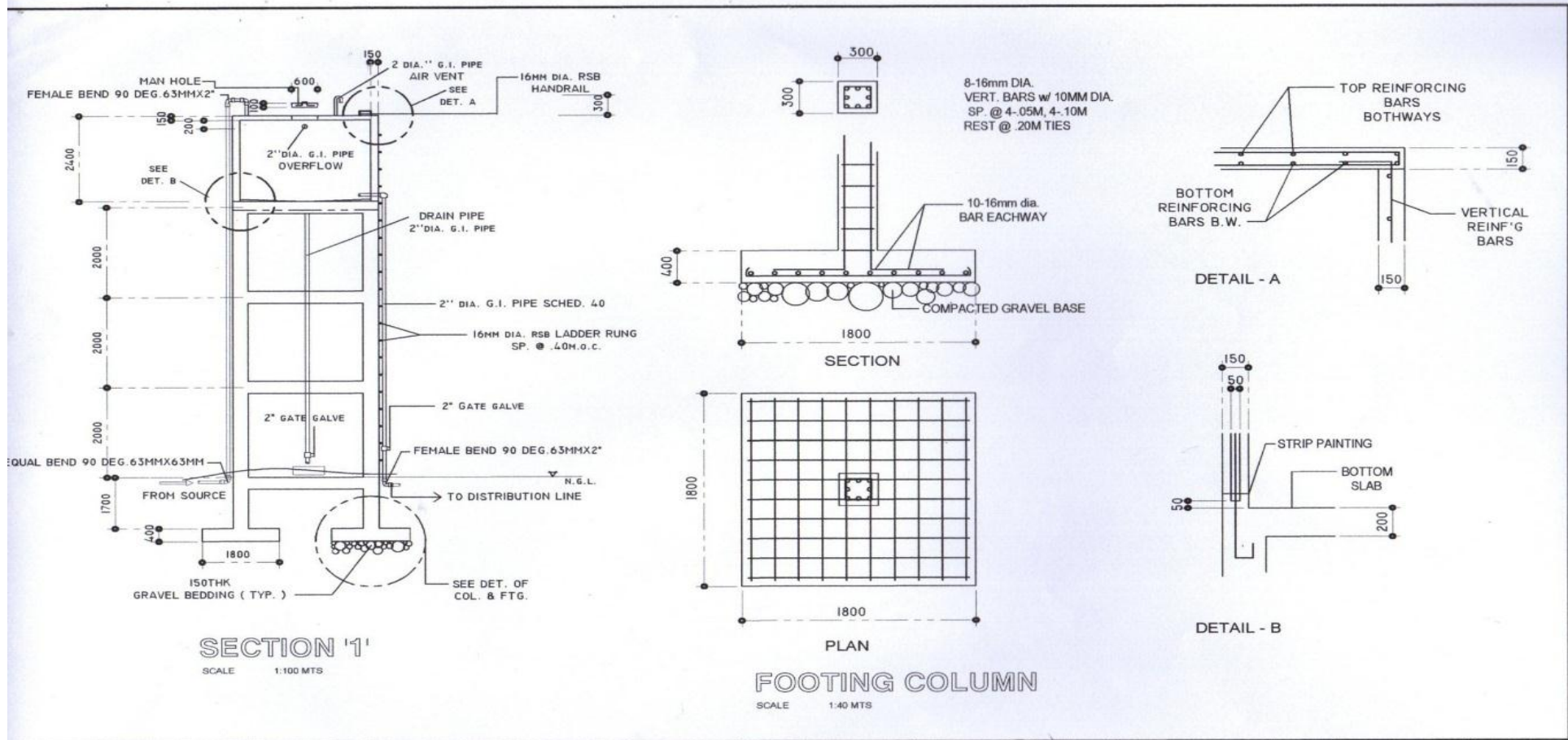
CHECKED & REVIEWED BY:
Leoniolo D. Cavan
LEONILO D. CAVAN, CE
Engineer III

RECOMMENDING APPROVAL:
Felicitas Detros
FELICITAS DETROS, CE
Municipal Engineer

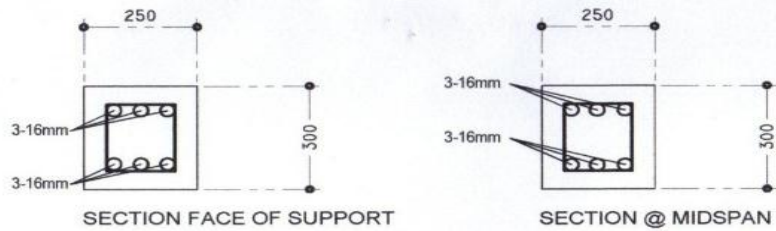
APPROVED BY:
Lema Poblete-Solo
LEMA POBLETE-SOLO, CPA
Municipal Mayor

SHEET CONTENTS
LOCATION PLAN
VICINITY MAP
SITE DEVELOPMENT PLAN
TABLE OF CONTENTS
NOTES AND SPECIFICATIONS

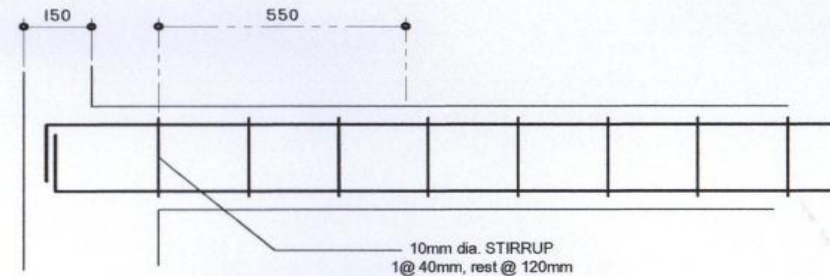
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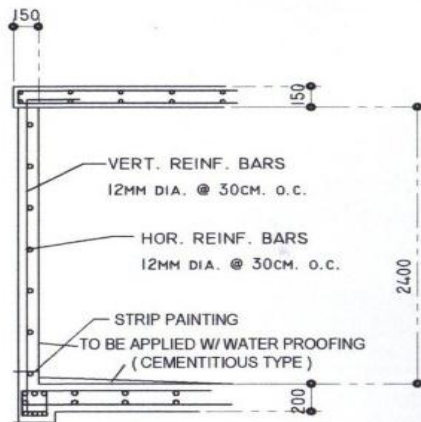
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Location: Purok 4-A, Mangayon, Compostela Davao De Oro						



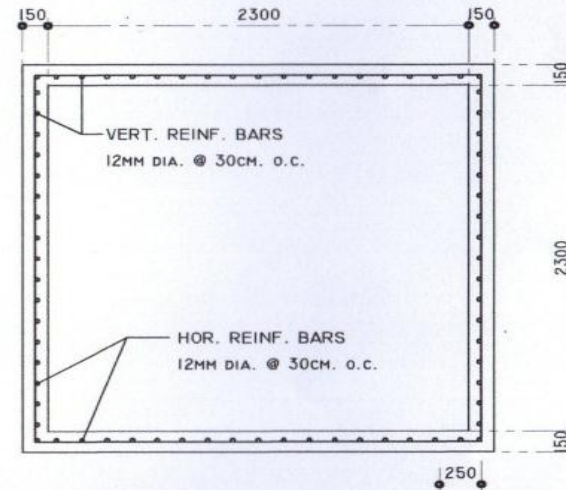
SECTION
SCALE 1:15 MTS



SUPPORTING BEAM DETAIL
SCALE 1:15 MTS

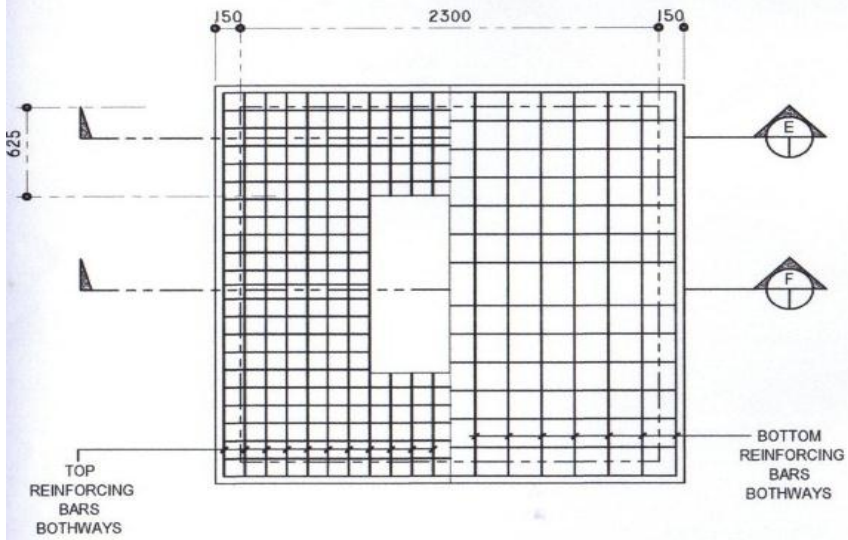


WALL DETAIL
SCALE 1:40 MTS



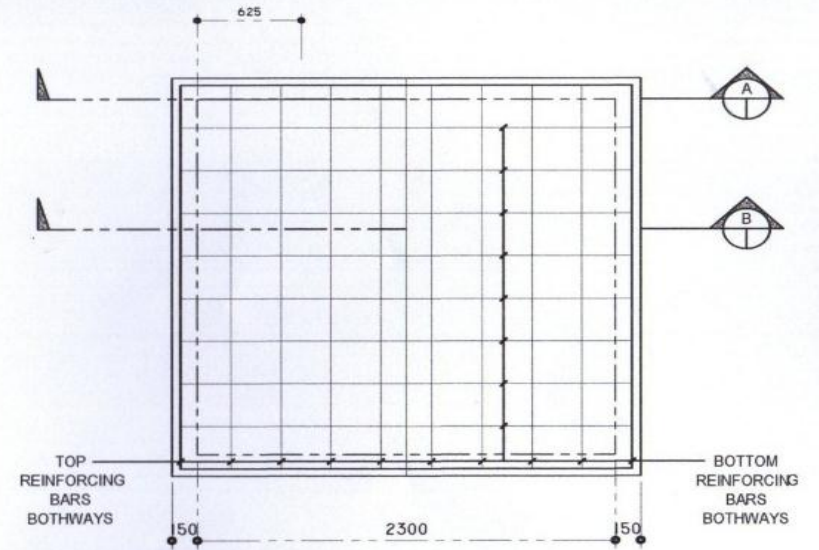
PLANT AT MID HEIGHT OF TANK
SCALE 1:40 MTS

REPUBLIC OF THE PHILIPPINES MUNICIPALITY OF COMPOSTELA COMPOSTELA DAVAO DE ORO OFFICE OF THE MUNICIPAL ENGINEER AND BUILDING OFFICIAL	PROJECT TITLE	CAD BY:	PREPARED BY:	CHECKED & REVIEWER BY:	APPROVED BY:	SHEET CONTENTS	SHEET NO.
	CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON Location: Purok 4-A, Mangayon, Compostela Davao De Oro	Gleng B. Verallo Arch'l. Draftsman	Leonido O. Cavan Engineer III	Felicitas R. Dantes Municipal Engineer	Lema P. Bolo, CPA. Municipal Mayor	RESERVOIR DET.	5 7



BOTTOM OF SLAB

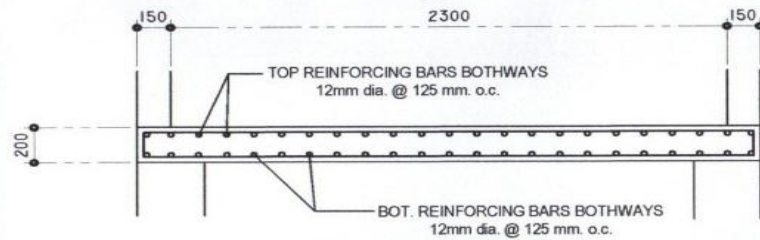
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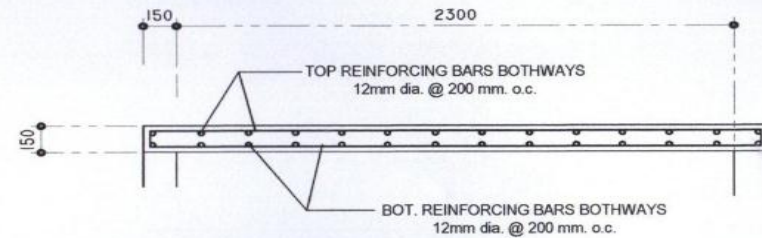
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REPUBLIC OF THE PHILIPPINES MUNICIPALITY OF COMPOSTELA COMPOSTELA DAVAO DE ORO OFFICE OF THE MUNICIPAL ENGINEER AND BUILDING OFFICIAL	PROJECT TITLE	CAD BY:	PREPARED BY:	CHECKED & REVIEWED BY:	APPROVED BY:	SHEET CONTENTS	SHEET NO.
	CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON	Glenn B. Verallo Arch/Craftsman	Leonilo O. Cavan Engineer III	Felicita R. Detros Municipal Engineer	Lema P. Bolo, CPA. Municipal Mayor	RESERVOIR DET.	6 7
	Location: Purok 4-A, Mangayon ,Compostela Davao De Oro						



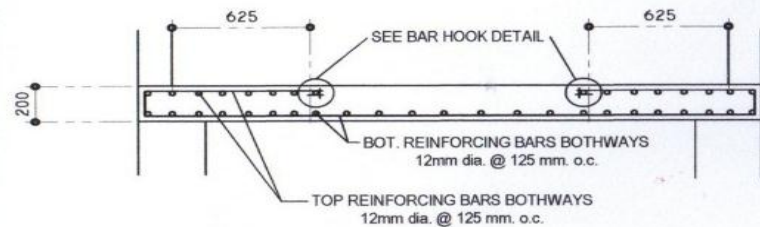
SECTION E E

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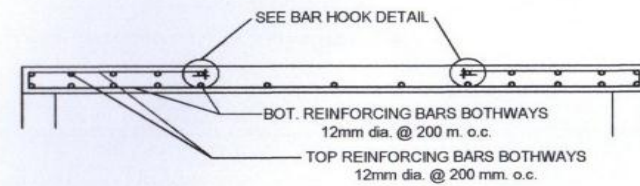
SECTION A A

SCALE 1:30 MTS



SECTION F F

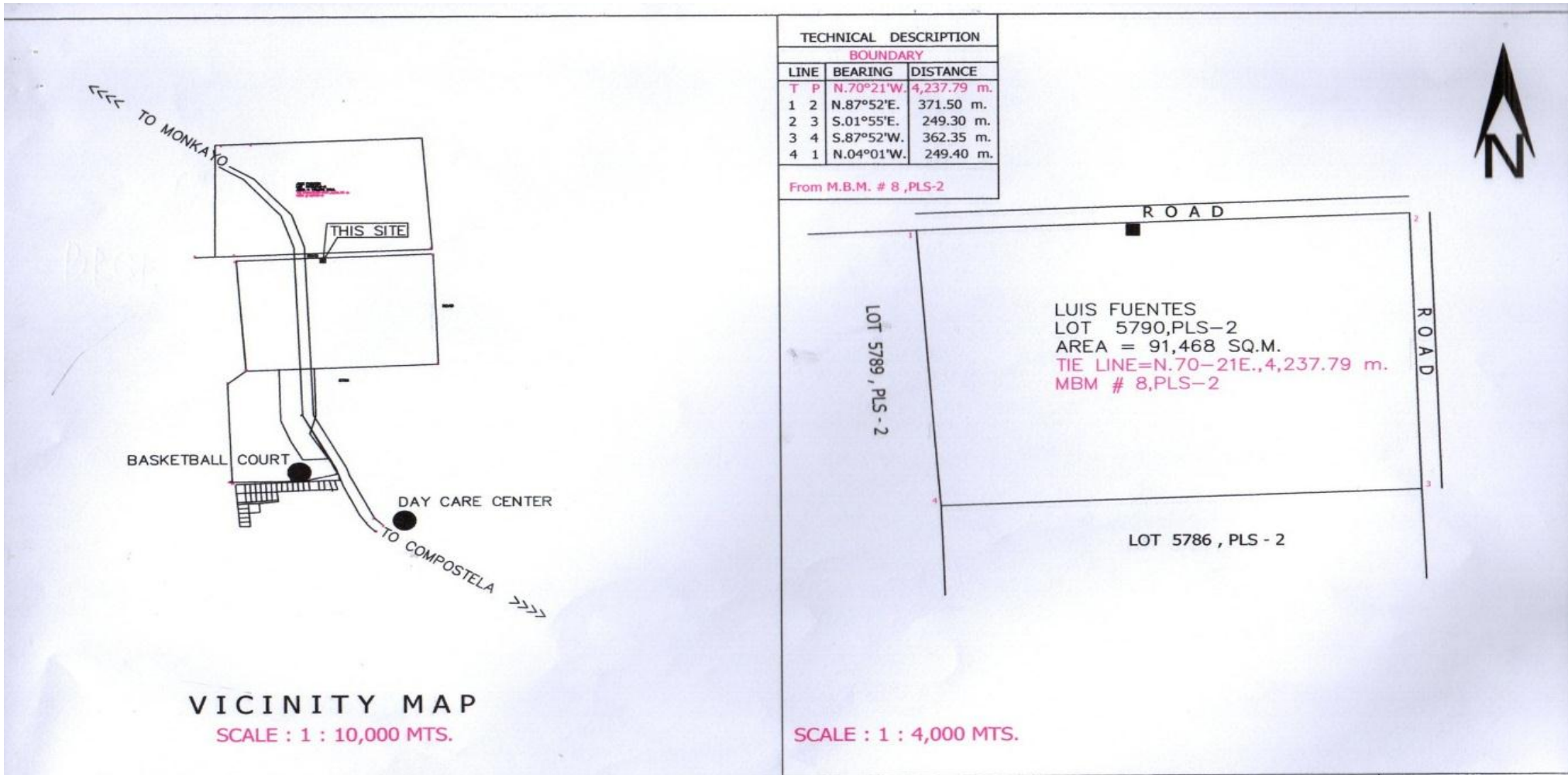
SCALE 1:30 MTS



SECTION B B

SCALE 1:30 MTS

REPUBLIC OF THE PHILIPPINES MUNICIPALITY OF COMPOSTELA COMPOSTELA DAVAO DE ORO OFFICE OF THE MUNICIPAL ENGINEER AND BUILDING OFFICIAL	PROJECT TITLE	CAD BY:	PREPARED BY:	CHECKED & REVIEWED BY:	APPROVED BY:	SHEET CONTENTS	SHEET NO:
	CONSTRUCTION OF RESERVOIR FOR PAGLINTIAN SPRING WATER SYSTEM @ PUROK 4-A, MANGAYON Location: Purok 4-A, Mangayon ,Compostela Davao De Oro	Glenn B. Verallo Archt. Draftsman	Leonilo D. Cavan Engineer III	Felicitia R. Detros Municipal Engineer	Lema P. Bolo, CPA. Municipal Mayor	RESERVOIR DET.	<div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> 7 7 </div>



REPUBLIC OF THE PHILIPPINES MUNICIPALITY OF COMPOSTELA COMPOSTELA VALLEY PROVINCE OFFICE OF THE MUNICIPAL ENGINEER MUNICIPAL BUILDING OFFICIAL BRGY MANGAYON, COMPOSTELA, DVO DE ORO	PROJECT / TITLE	PREPARED BY :	CHECKED BY:	APPROVED BY:	NOTED BY:
	SITE DEVELOPMENT PLAN	ANTHONY M. VELOZ INSTRUMENT MAN	FELICITA R. DETROS MUNICIPAL ENGINEER	WILLIAM P. TAGRA BRGY CAPTAIN	LEVI S. EBDAL MUNICIPAL MAYOR

Section VIII. Bill of Quantities

Project Title: *Construction of Reservoir for Paglintian Spring Water System at Purok 4-A, Mangayon*

ABC (Php): 1,176,500.00

Project Title: <i>Construction of Reservoir for Paglintian Spring Water System at Purok 4-A, Mangayon</i>					
ABC (Php): <i>1,176,500.00</i>					
Item No.	Description of Works	Quantity	Unit	Unit Price (In words & figures)	Total Price (In words & figures)
1.	I. PLASTERING WORKS	90	SQ.M.		
2.	II. REINFORCED CONCRETE WORKS	17.18	CU.M.		
3.	III. CARPENTRY WORKS	1,336	BD.FT.		
4.	IV. PAINTING WORKS AND WATERPROOFING	67	SQ.M.		
5.	V. EXCAVATION	96	CU.M.		
6.	VI. BACKFILL	86.4	CU.M.		
7.	VII. INSTALLATION OF PIPELINES AND FITTINGS	1,200	LOT		
8.	VIII. BILLBOARD	1	LOT		
<i>GRAND TOTAL (In words and Figures)</i>					

Note: Total cost of line item includes cost of Contractor's Profit, VAT Tax, others

_____ Name of Bidder	_____ Authorized Signatory	_____ Date
-------------------------	-------------------------------	---------------

Section IX. Checklist of Technical and Financial Documents

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;
 - d. Affidavit of Site Inspection;
 - e. Construction schedule and S-curve;
 - f. Manpower schedule;
 - g. Construction methods;
 - h. Equipment utilization schedule;

- i. Construction Safety and Health Program approved by the DOLE;
 - j. PERT/CPM **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.
- (l) Mayor's Permit (Municipality of Compostela)
- (m) Bidder's Fee (Official Receipt)

Financial Documents

- (n) 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**
- (o) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- (p) 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

- (q) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

- (r) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (s) 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**
- (t) Cash Flow by Quarter.

Bidding Forms

Bid Form for the Procurement of Infrastructure Projects

BID FORM

Date : _____

Project Identification No. : _____

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

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract]*;
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;
- d. The discounts offered and the methodology for their application are: *[insert information]*;
- e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

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

Date: _____

STATEMENT OF THE BIDDER OF ALL ITS ONGOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED

Business Name: _____

Business Address: _____

Name of Contract	Date of Contract	Contract Duration	Owner's Name & Address	Nature of Work	Contractor's Role		Total Contract Value at Award	Estimated Completion Time	Estimated Contract Value at Completion	% of Accomplish-ments		Value of Outstanding Works
					Description	% of Participation				Planned	Actual	
<u>GOVERNMENT</u>												
<u>PRIVATE</u>												
										TOTAL		

Note: This statement shall be supported with:

1. Notice of Award
2. Contract Agreement

Submitted by: _____
Printed Name and Signature

Designation: _____

Date: _____

STATEMENT OF SINGLE LARGEST COMPLETED CONTRACTS (SLCC)

Business Name: _____

Business Address: _____

Name of Contract	Date of Contract	Contract Duration	Owner's Name & Address	Nature of Work	Contractor's Role		Total Contract Value at Award	Date of Completion Time	Total Contract Value at Completion
					Description	% of Participation			
<u>Government</u>									
<u>Private</u>									

Note: This statement shall be supported with:

1. Notice of Award and/or Notice to Proceed
2. Contract Agreement
3. Certificate of Final Acceptance or Constructors Performance Evaluation System (CPES) of at least satisfactory rating.

Submitted by: _____

Printed Name and Signature

Designation: _____

Date: _____

NFCC COMPUTATION

- A. Summary of the Applicant Supplier's/Distributor's/Manufacturer's assets and liabilities on the basis of the attached income tax return and audited financial statement, stamped "RECEIVED" by the Bureau of Internal Revenue or BIR authorized collecting agent, for the immediately preceding year and a certified copy of Schedule of Fixed Assets particularly the list of construction equipment.

		Year 20__
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2- 4)	

- B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current Asset – Current Liabilities) (15)] minus value of all outstanding works under ongoing contracts including awarded contracts yet to be started

NFCC = P _____

Submitted by:

Name of Supplier / Distributor / Manufacturer

Signature of Authorized Representative

Date : _____

Bid Securing Declaration Form

[shall be submitted with the Bid if bidder opts to provide this form of bid security]

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

BID SECURING DECLARATION **Project Identification No.: *[Insert number]***

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

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
 - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

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

*[Insert NAME OF BIDDER OR ITS AUTHORIZED
REPRESENTATIVE]*

[Insert signatory's legal capacity]
Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

Omnibus Sworn Statement (Revised)

[shall be submitted with the Bid]

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

AFFIDAVIT

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

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

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

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

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

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

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

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

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

6. *[Select one, delete the rest:]*
[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
- [If a partnership or cooperative:]* None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
- [If a corporation or joint venture:]* None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
- a. Carefully examining all of the Bidding Documents;
 - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
 - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
 - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
- 10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

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

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

FOR YOUR INFORMATION!
BIDDERS/SUPPLIERS/CONTRACTOR'S

ARTICLE 17 – PERMIT FEE FOR PRIVATE CONTRACTORS

Section 85 – DEFINITION OF TERMS

- (A) **"CONTRACTOR"** – includes persons, natural or juridical, not subject to professional tax under Section 139 of the Local Government Code, whose activity consist essentially of the sale of all kinds of goods or services for a fee, regardless of whether or not the performance of the service calls for the exercise or use of the physical or mental faculties of such contractor or his/her employees or supplier, manufacturer of heavy or light equipment and the likes.

SECTION 86 – TAX ON BUSINESS SITUATED OUTSIDE THE MUNICIPALITY

A tax shall be imposed to any person or entity whose business is situated outside the Municipality after participating a public bidding or other modality of procurement have been awarded the contract subject to the existing tax schedule promulgated for the purpose and the nature of business as defined herein.

The total contract cost shown in the Purchase Order and or Contract Agreement shall be the amount subject to tax. Corresponding deduction shall be made for each transaction and for any and all voucher made as payment of obligation incurred after full delivery of goods and services and acceptance thereof.

SECTION 87 – IMPOSITION OF CONTRACTOR PERMIT FEE

That any individual, person, company, corporation or having juridical entity shall secure necessary permit and **shall pay a Contractor Permit Fee of One Percent (1%) based on the Project Cost.**

SECTION 88 – TIME OF PAYMENT

The fee is imposed shall be payable before issuance of Notice to Proceed or Notice of Award or shall be made before the commencement of the work.

As per 2022 Revised Omnibus Revenue Code of the Municipality of Compostela

