

POLOMOLOK WATER DISTRICT

BIDDING DOCUMENTS

for the

**CONSTRUCTION OF MOTORPOOL
& FABRICATION AREA PHASE 2**

MAY 2022

Preface

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

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

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

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

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

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria.

The IB should be incorporated into the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.



REPUBLIC OF THE PHILIPPINES
POLOLOK WATER DISTRICT

National Highway, Polomolok, South Cotabato
Tel Nos. (083) 500-926/ 500-9314/500-9340 / Telefax No. (083) 500-8008

**INVITATION TO BID FOR *CONSTRUCTION OF
MOTORPOOL & FABRICATION AREA PHASE 2***

1. The Polomolok Water District, through the Government of the Philippines under the Corporate Budget for the Contract approved by the Board for FY 2022 intends to apply the sum of **Eight Hundred Ninety Five Thousand Five Hundred Pesos & 0/100 Only (PHP 895,500.00)**, inclusive of VAT and all other applicable government taxes, fees and other charges, being the Approved Budget for the Contract (ABC) to payments under the contract PB 22-16, **CONSTRUCTION OF MOTORPOOL & FABRICATION AREA PHASE 2**. Bids received in excess of the ABC shall be automatically rejected on bid opening
2. The Polomolok Water District now invites Bids from **MANUFACTURERS/SUPPLIERS & ELIGIBLE BIDDERS** for the **CONSTRUCTION OF MOTORPOOL & FABRICATION AREA PHASE 2**. Completion of the Works is required within **57 calendar days** from receipt of Notice to Proceed or Purchase Order. Bidders should have completed, within 3 years from the date of submission and receipt of bids, 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 a 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 Polomolok Water District and inspect the Bidding Documents at the address given below during business hours from 8:00 AM to 4:00 PM and/or at the PhilGEPS website and Polomolok Water District website.
5. A complete set of Bidding Documents may be acquired by interested Bidders on *25 May 2022* from the given address and website(s) below:

PhilGEPS website (<https://www.philgeps.gov.ph>) and Polomolok Water District website (polwaterdistrict.gov.ph)

*and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **PHP 1,000.00**. The bidder shall present its proof of payment for the fees by *facsimile* (083 – 500 – 8008), or through *e-mail* (bacpolwd@gmail.com) the scanned proof of the payment.*

6. Polomolok Water District through its Bids and Awards Committee will hold a Pre-Bid Conference on **02 June 2022, 9:00 AM** at the Conference Room, 2nd Floor Admin. Bldg. Polomolok Water District **via video conferencing thru Zoom** which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat at the address below on or before **20 June 2022 at 9:00 AM**. If a bidder chooses to submit a soft copy of the bids online, the bidder shall send it to **a unique shared link which will be provided by the BAC Secretariat to a particular bidder**. The confidentiality of the submitted bids is protected by the bidder's password. 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 14.
9. Bid opening shall be on **20 June 2022 at 9:00 AM** at the Conference Room, 2nd Floor Admin. Bldg. Polomolok Water District. Bids will be opened in the presence of the bidders' representatives who choose to attend the Bid Opening at the address below and at the same time.
10. For the online submission of bids, the bidders will be given a link where to submit its bids. Bidders must submit a PDF copy of the notarized Bid Securing Declaration or a scanned copy of any acceptable form of Bid Security, together with the eligibility requirements, technical and financial proposals, as specified in the Bidding documents. The date and time appearing in the e-mail of BAC for the bids submitted online must be on or before **20 June 2022 at 9:00 AM** to be on time.
11. The BAC shall open the online submitted bids with the bidder's password, which is only known to the bidder, during the opening of bids. This is to maintain the integrity of the government bidding process
12. The Polomolok Water District reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
13. For further information, please refer to:

BAC - Secretariat
Polomolok Water District
TeleFax No. : (083) 500-8008
E-mail address : **bacpolwd@gmail.com**

14. For downloading of Bidding Documents, you may visit the following websites:

<https://www.philgeps.gov.ph> - PhilGEPS
polwaterdistrict.gov.ph - Polomolok Water District

SGD

ENGR. CECIL D. MIRASOL
BAC Chairman

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

1. Scope of Bid

The Procuring Entity, *POLOMOLOK WATER DISTRICT* invites Bids for the **CONSTRUCTION OF MOTORPOOL & FABRICATION AREA PHASE 2**, with Project Identification Number *PB 22-16*.

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 *FY 2022* in the amount of **Eight Hundred Ninety Five Thousand Five Hundred Pesos & 0/100 Only (PHP 895,500.00)**.

2.2. The source of funding is:

a. GOCC and GFIs, the Corporate Operating Budget.

3. Bidding Requirements

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

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

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

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

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

5. Eligible Bidders

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

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

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

6. Origin of Associated Goods

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

7. Subcontracts

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

The Procuring Entity has prescribed that:

- a. **Subcontracting is not allowed.**

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting as indicated in paragraph 6 of the **IB**.

9. Clarification and Amendment of Bidding Documents

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

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

10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

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

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

15. Bid Security

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

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

16. Sealing and Marking of Bids

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

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

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

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

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

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Notes on the Bid Data Sheet (BDS)

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

Bid Data Sheet

ITB Clause																	
5.2	<p>For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:</p> <p style="text-align: center;"><i>Construction of Building & other related Infrastructure Projects</i></p>																
7.1	<i>Not Applicable</i>																
10.3	<i>PCAB License – Small A – Category Trade/E, Small B Category C & D</i>																
10.4	<p>The following key personnel shall be present during the implementation of the project and must meet the required minimum years of experience set below:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;"><u>Key Personnel</u></th> <th style="text-align: center;"><u>Relevant Experience</u></th> </tr> </thead> <tbody> <tr> <td>Safety Officer</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>Foreman</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>Mason</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>Carpenter</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>Laborer (Skilled)</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>Laborer (Unskilled)</td> <td style="text-align: center;">minimum of 5 years</td> </tr> <tr> <td>First Aider</td> <td style="text-align: center;">minimum of 5 years</td> </tr> </tbody> </table>	<u>Key Personnel</u>	<u>Relevant Experience</u>	Safety Officer	minimum of 5 years	Foreman	minimum of 5 years	Mason	minimum of 5 years	Carpenter	minimum of 5 years	Laborer (Skilled)	minimum of 5 years	Laborer (Unskilled)	minimum of 5 years	First Aider	minimum of 5 years
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Equipment	No.																
Backhoe	1																
Welding Machine	1																
12	<i>Not allowed</i>																
15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <ul style="list-style-type: none"> a. The amount of not less than PHP 17,910.00, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or b. The amount of not less than PHP 44,775.00 if bid security is in Surety Bond.3 																

16	<p>Each Bidder shall submit 1 original of the first and second components of its bid or two (2) password-protected Bidding Documents in compressed archive folders, in case of electronic bid submission, and which shall be submitted simultaneously. The first shall contain the technical component of the bid, including the eligibility requirements under Section 23.1 of this IRR</p> <p>For authentication purposes, all pages of the bidding documents for submission must be certified by the authorized signatory of the participating Bidder/Company. The bidders are also reminded to PUT PROPER TAB ON EACH BIDDING DOCUMENTS.</p> <p>Unsealed or unmarked bid envelopes, or in case of electronic bid submission, Bidding Documents not in compressed archive folders and are not password protected, shall be rejected. However, bid envelopes that are not properly sealed and marked shall be accepted, provided that the bidder or its duly authorized representative shall acknowledge such condition of the bid as submitted. The BAC shall assume no responsibility for the misplacement of the contents of the improperly sealed bid envelopes or improperly compressed or password-protected folder, or for its premature opening.</p>
19.2	Partial bids are not allowed.
20	No further instructions
21	<p>The winning bidder shall submit the following additional documents relevant to the Project ten (10) calendar days from the receipt of the Notice of Award:</p> <ul style="list-style-type: none"> - construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the Department of Labor and Employment, and PERT/CPM or other acceptable tools of project scheduling. - Statement of Compliance with the Construction Guidelines for Project Implementation during the period of Public Health Emergency and Certification and Undertaking pursuant to the Revised Construction Safety Guidelines for the Implementation of Infrastructure Projects during the COVID – 19 Public Health Crisis, repealing Department Order No. 35, series of 2020. - Contractor’s All Risk Insurance

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Contractor, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Works procured. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

Special Conditions of Contract

GCC Clause	
2	No sectional completion of Works
4.1	The schedule of delivery of the possession of the site to the Contractor, shall be in full to carry out the projects on its intended completion of date which is 57 calendar days.
6	No further instructions.
7.2	Fifteen (15) years.
10	Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within <i>ten (10) calendar</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 5% of the contract amount .
13	The amount of the advance payment <i>shall not exceed 15% of the total contract price and schedule of payment</i> .
14	Materials and equipment delivered on the site but not completely put in place shall not be included for payment.
15.1	The date by which operating and maintenance manuals are required: Not applicable. The date by which "as built" drawings are required is <i>fifteen (15) calendar days after project completion</i> .
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 5% of the contract amount .

Section VI. Specifications

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of international competitive bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is mandatory. Most specifications are normally written specially by the Procuring Entity or its representative to suit the Works at hand. There is no standard set of Specifications for universal application in all sectors in all regions, but there are established principles and practices, which are reflected in these PBDs.

There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, ports, railways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, although not necessarily to be used in a particular Works Contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, and workmanship, recognized international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that goods, materials, and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the SCC.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be accepted subject to the Procuring Entity's Representative's prior review and written consent.

Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Procuring Entity's Representative at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's Representative's consent. In the event the Procuring Entity's Representative determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

These notes are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final Bidding Documents.

A. GENERAL WORKS

SCOPE, CONDITION OF CONTRACT

1.1 The civil works shall consist of the following:

- 1.1.1 General Requirements
 - 1.1.1.1 Office, shops, stores and workmen accommodation for Contractor
 - 1.1.1.2 Safety, Health Protocols and Medical Supplies
- 1.1.2 Clearing and Grubbing
- 1.1.3 Earthworks
 - 1.1.3.1 Excavation
 - 1.1.3.2 Embankment
 - 1.1.3.3 Grading
 - 1.1.3.4 Gravel Bedding
- 1.1.4 Forms and False works
- 1.1.5 Reinforcement
- 1.1.6 Concrete Works
- 1.1.7 Masonry Works
- 1.1.8 Steel Works
- 1.1.9 Roofing Works
- 1.1.10 Electrical Works
- 1.1.11 Painting Works

1.2 The Drawing and Specification are intended to provide a broad outline of the required equipment and system operation and may not include all details of the entire construction. Any item of work or material though not expressly shown on the Drawing or specified herein but is obviously necessary to obtain a usable installation shall be deemed included in the required works.

1.3 As the term used in this Specification the word "Owner" refers to Polomolok Water District (PoWD) named in the contract. The word or term "Engineer" refers to the individual of firm authorized by the Polomolok Water District, acting as the Owner's representative to oversee the execution of the contract. The word or term "Contractor" refers to the party who entered into Contract with the Owner.

1. GENERAL REQUIREMENTS

1.2 OFFICE, SHOPS, STORES AND WORKMEN ACCOMODATION FOR CONTRACTOR

The contractor shall provide and maintain such offices, stores, workshops latrines, housing and messing accommodations as are necessary. These should be located in the Contractor's compound, distinct and separate from the Engineer's compound. The location, dimensions and layout of such buildings and places shall be subject to the approval of the Engineer. The Contractor shall not be permitted to erect temporary buildings or structures on the site without the specific permission in writing of the Engineer including approval of the dimensions of such buildings or structures. Before the commencement of the period of Warranty, the Contractor shall fence of the Contractor's store area from the rest of the Site. By the end of the Period of Warranty, the Contractor shall remove this fence and all buildings shall be cleared and the area shall be graded as required by the Engineer.

1.3 SAFETY, HEALTH PROTOCOLS AND MEDICAL SUPPLIES

1. As the current pandemic still existing, the Contractor shall provide face shield and face mask to its workmen along with a thermometer to monitor their temperature throughout the duration of the project.
2. The Contractor shall provide and maintain throughout the duration of the Contract, a medical room together with all necessary supplies to be sited in the Contractor's main area. The medical room shall be waterproof; it could be a building or room designated and used exclusively for the purpose.
3. The Contractor shall employ permanently on the site a fully trained Medical Aide who shall be engaged solely from medical duties.
4. The location of the medical room and any other arrangements shall be made known to all employees by posting on prominent locations suitable notices in the Site.

2. CLEARING AND GRUBBING

All surface objects and all trees, stumps, roots and other protruding obstructions, not designated to remain, shall be cleared and/or grubbed, including mowing as required, except as provided below:

1. Removal of undisturbed stumps and roots and non-perishable solid objects with a minimum depth of one (1) meter below subgrade or slope of embankment will not be required.
2. In areas outside of the grading limits of cut and embankment areas, stumps and non-perishable solid objects shall be cut off not more than 150 mm (6 inches) above the ground line or low water level.
3. In areas to be rounded at the top of cut slopes, stumps shall be cut off flush with or below the surface of the final slope line.
4. Grubbing of pits, channel changes and ditches will be required only to the depth necessitated by the proposed excavation within such areas.
5. In areas covered by cogon/talahib, wild grass and other vegetations, top soil shall be cut to a maximum depth of 150 mm below the original ground surface or as designated by the Engineer, and disposed outside the clearing and grubbing limits as indicated in the typical roadway section.

3. EARTHWORKS

GENERAL

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

3.1 EXCAVATION

GENERAL

Excavation shall include the removal of materials of whatever nature encountered, including all obstruction of any nature that would interfere with the proper execution and completion of the work. The removal of said materials shall be stripped of all vegetation and debris, and such materials shall be removed from the site prior to performing any excavation or placing of any fill. 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 removal or exclusion of water, including taking care of storm water and waste water reaching and site of the work from any source as to prevent damage to the work or adjoining property.

The walls and faces of all excavations in which workers are exposed to danger from unstable ground, shall be guarded against by a shoring system, sloping of the excavation, or some other acceptable method. The Contractor shall furnish, install, and maintain such sheeting, 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 where workers may be required to enter, excavation or other materials shall be effectively stored and retained at least 600mm or more from the edge of the excavation. All excavation and trenching operation shall confirm to any and all national, provincial, and local safety requirements.

EXCAVATION BENEATH PROPOSED STRUCTURE

Expect where otherwise specified for particular structures or ordered by the Engineer, excavation shall be carried to the grade of the bottom of the footing or slab. When shown or ordered, areas beneath proposed structures shall be over-excavated. When such over excavation is shown on the Drawings, both over-excavation and subsequent backfill to the required grade shall be performed by the Contractor at his own expense. After the required excavation or over-excavation has been completed, the exposed surface shall be scarified to a depth of 150mm (6-in.) brought to optimum moisture content, and rolled with heavy compaction equipment to ninety-five percent (95%) of maximum dry density.

UTILIZATION OF EXCAVATED MATERIALS

All excavated materials, so far as suitable, shall be utilized as backfill or embankment. The surplus materials shall be disposed off in such manner as not to obstruct the stream or otherwise impair the efficiency or appearance of the structure. No excavated materials shall be deposited at any time so as to endanger the partly finished structure.

3.2 EMBANKMENT OR BACKFILLING

DESCRIPTION

This Item shall consist of the construction of embankment in accordance with this Specification and in conformity with the lines, grades and dimensions shown on the Plans or established by the Engineer.

MATERIAL REQUIREMENTS

Embankments shall be constructed of suitable materials, in consonance with the following definitions:

1. Suitable Material – Material which is acceptable in accordance with the Contract and which can be compacted in the manner specified in this Item. It can be common material or rock.

Selected Borrow, for topping – soil of such gradation that all particles will pass a sieve with 75 mm (3 inches) square openings and not more than 15 mass percent will pass the 0.075 mm (No. 200) sieve, as determined by AASHTO T 11. The

material shall have a plasticity index of not more than 6 as determined by ASSHTO T 90 and a liquid limit of not more than 30 as determined by AASHTO T 89.

2. Unsuitable Material – Material other than suitable materials such as:
 - a. Materials containing detrimental quantities of organic materials, such as grass, roots and sewerage.
 - b. Organic soils such as peat and muck.
 - c. Soils with liquid limit exceeding 80 and/or plasticity index exceeding 55.
 - d. Soils with a natural water content exceeding 100%.
 - e. Soils with very low natural density, 800 kg/m³ or lower.
 - f. Soils that cannot be properly compacted as determined by the Engineer.

BACK AROUND AND BENEATH PROPOSED STRUCTURES AND PAVED AREAS

Except where otherwise specified for a particular structure or ordered by the Engineer, backfill placed around and beneath proposed structures and paved areas shall be placed in horizontal layers not to exceed 200mm (8-in.) in thickness, as measured before compaction, where compaction is attained by means of sheep foot roller and a pneumatic vibrating roller or a manual compaction. Where the use of sheep foot roller is impractical, the layers shall not exceed 150mm (6-in.) in thickness before compaction, and compaction shall be attained by means of hand-operated power driven tampers. The backfill shall be brought up evenly with each layer moistened and compacted by mechanical means to ninety-five percent (95%) of maximum dry density beneath proposed structures, and ninety percent (90%) of maximum dry density around the sides of the structures and beneath proposed paved areas.

EMBANKMENT FILL

The area where an embankment is to be conducted shall be cleared of all vegetation, roots, and foreign materials. Following this, the surface shall be moistened, scarified to a depth of 150mm (6-in.) and rolled or otherwise mechanically compacted to ninety percent (90%) of maximum density elsewhere. Embankment fill shall be placed in horizontal layers not to exceed 200mm (8-in.) in thickness, as measured before compaction, where compaction is attained by means of sheep foot rollers is impracticable, the layer shall not exceed 150mm (6-in.) in thickness before compaction, and compaction shall be attained by means of hand-operated power driven tampers. The backfill shall be brought up evenly with each layer moistened and compacted by mechanical means to ninety-five percent (95%) of maximum dry density beneath proposed structures, and ninety percent (90%) of maximum dry density around the sides of the structures and beneath proposed paved areas.

3.3 GRADING

The Contractor shall perform all grading in the areas as indicated. Tolerance in final grading in unpaved areas shall not exceed 30mm above or below the grades indicated. Finish grading shall be accomplished so as to readily drain into the drainage facilities or

adjacent natural drainage areas, without the formation of pockets in which water will stand.

3.4 GRANULAR BEDDING

GENERAL

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

ARRIVAL OF MATERIALS

Granular aggregate bedding shall be delivered at the site of the work as a uniform mixture. Aggregate base shall be compacted by means of approved vibrating plate compactors or mechanical tampers. Each succeeding pass shall overlap the previous pass by at least, one third of the compactor width. No material shall be spread on soaked surface.

MATERIAL REQUIREMENT

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

- 1) *The aggregate when graded shall produce a smooth, evenly distributed curve within the limits as shown in Table below.*

TABLE1 – GRANULAR MATERIAL GRADING

USING STANDARD SIEVE WEIGHT		PERCENT PASSING BY WEIGHT
Mm	Alternative	
37.5	(1-1/2")	100
9.5	(1")	-

- 2) *The material shall have a soaked CBR-value of not less than 25%, determined according to ASTM D 1833. The CBR-value shall be obtained at density corresponding to 98% of the maximum dry density determined according to AASHTO T 180 Method D.*

- 3) *The coarse aggregate material retained on a 4.75mm (no.4) sieve shall have a percentage of wear by the Los Angeles Abrasion test (AASHTO96) of not more than 96.*
- 4) *The maximum dimension of any particle shall not be greater than two-thirds of the required thickness of the layer in which it is to be placed. Oversize material if present shall be removed by hand picking.*

4. FORMS AND FALSE WORKS

GENERAL

The Contractor shall provide forms to confine the concrete and shape it to the required lines. Plastering, in general, shall not be allowed. The Contractor shall assume full responsibility for the adequate design of all form. However, form which in the opinion of the Engineer are unsafe or inadequate in any time be condemned by the Engineer; and the contractor shall promptly remove the condemned forms for the work and replace them at his own expenses. A sufficient number of forms of each kind shall be provided to permit the required rate of progress to be maintained. Whenever, in the opinion of the Engineer, additional forms are necessary to maintain the progress schedule such additional forms shall be provide by the Contractor at his own expense. The design and inspection of the concrete forms, false work, and shoring shall comply with applicable safety regulations, and as may be specified in the General Condition of these Specifications.

MATERIALS

Except as otherwise expressly approved by the Engineer, all lumber brought at the job site for use as forms, shoring, or bracing shall be new material.

All forms shall be smooth surface forms and shall be of the following materials:

- | | | |
|----------------|---|-----------------------------|
| Columns | - | Plywood, or surface lumber |
| Tie Beam | - | Plywood, or surface lumber |
| All other work | - | Plywood, or surfaced lumber |

Plywood shall be manufactured especially for concrete form work and shall be oiled with An approved from oil and edge sealed.

COLUMN FORMS

Column forms shall be checked using a plumb to get or maintain a straight vertical level before concrete is deposited. Provide holes for reinforcement dowels in columns for the preparation of masonry works.

TIE BEAM FORMS

Tie Beam forms shall be checked using a levelling hose to get or maintain a straight horizontal level before concrete is deposited. Height of Tie Beam shall be indicate on the plans or obtained from the Engineer by the Contractor.

TOLERANCE LIMIT FOR THE WORK:

1. Variation from the plumb:

In lines and surface of columns: $\pm 3.0\text{mm}$ to 5.00mm

2. Variation from the levelling hose:

In lines and surface of Tie Beams: $\pm 3.0\text{mm}$ to 5.00mm

3. Variation in cross sectional dimensions of columns and piers, beams and thickness of walls and slabs:

Minus 6.3 mm (1/4 in.)

Plus 13.0 mm (1/2 in.)

4. Footings:

Variation in dimensions on drawings (applied to concrete only and not to reinforcing bars or dowels):

Minus 13.0 mm (1/2 in.)

Plus 50.0 mm (2 in.)

Misplacement of eccentricity, two percent (2%) of the footing width in the direction of misplacement but not to exceed 50.0 mm (2 in.)

Reduction in thickness, five percent (5%) at specified thickness

FORM DESIGN

1. All forms shall be true in every aspect to the required shape and size, shall conform to the establishment alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation or ridges, fins, or offsets, or similar surface defects in the finished concrete. Plywood, 16.0mm (3/4 in.) and greater in the thickness, may be fastened directly to studding in the studs are close enough to prevent visible deflection marks in concrete. Adequate clean-out wholes shall be provided at the bottom of each lift of forms. The size, number, and location, of such clean out shall be subject to the approval of the Engineer.
2. Concrete construction joint will not be permitted on location other than those shown or specified, except as may be approved by the Engineer. When a second lifts is placed on hardened concrete, special precaution shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory affects whatsoever on the concrete. Pipe studs and anchor bolts shall be set in the form where required.
3. Unless otherwise shown, exterior corners in concrete members shall be provided with 19.0mm (3.4 in.) chamfers, Re-entrant corners in concrete member shall not have fillets unless otherwise shown.

FORM DESIGN

All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for in the drawings or explicitly authorized by the Engineer. Not less than 25mm (1 in.) of concrete shall be added to the thickness of the concrete member as shown where concrete is permitted to be placed against timed ground in lieu of forms. Such permission will be granted only for members of comparatively limited height and where the character of the ground is such that it can be timed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.

MAINTENANCE OF FORMS

Forms shall be maintained at all times in good condition, particularly as to size, shape, strength, rigidity, tightness, smoothness of surface. Forms, when in place, shall conform to the established alignment and grades. Before concrete is placed, the forms shall be thoroughly cleaned. The forms surfaces shall be treated with a non-staining mineral oil or other lubricant approved by the Engineer. Any excess lubricant shall be satisfactorily removed before placing the concrete. In addition, all forms shall be given a preliminary oil treatment by the manufacturer or shall be oiled by the Contractor at least two (2) weeks in advance of their use. Care shall be exercised to keep oil off the surfaces of steel reinforcement and other metal items to be embodied in the concrete. Forms may be reused if in good condition and if approved by the Engineer. Light standing between uses will be required whenever necessary in the opinion of the Engineer to obtain uniform surface texture on all exposed concrete surface. Exposed concrete surfaces are defined as surfaces where they are permanently exposed to view. In the case of forms for the inside wall surfaces or hydraulic structures, unused tie rod holes shall be covered with metal caps or shall be filled by other methods approved by the Engineer.

REMOVAL OF FORMS

Direction of the Engineer concerning the removal of forms shall be strictly followed, and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. In the case of roof slabs and above ground floor slabs, forms shall remain in place until test cylinders for the roof concrete attain a minimum of compressive strength of 15.52 Mpa (2,250 psi) provide that no forms shall be disturbed or removed under an individual panel or unit before the concrete in the adjacent panel or unit has attained a strength of 15.52 Mpa (2,250 psi) and has been in place for a minimum of seven (7) days. The time required establishing said strength will be determined by the Engineer who will make several test cylinders for this purpose from concrete used in the first group of roof panel placed. If the time so determined is more than the seven-day minimum, then it shall be used as the minimum length of time. Forms for all vertical walls and columns shall remain in place at least three (3) days after the concrete has been placed. Forms for all parts of the work not specifically mentioned herein shall remain in place for periods of time as ordered by the Engineer.

5. REINFORCEMENT

GENERAL

Bar reinforcement for concrete structures, except No. 2 bars shall be deformed in accordance with AASHTO M 31.

Dowel and tie bars shall conform to the requirements of AASHTO M 31 except that rail steel shall not be used for tie bars that are to be bent and re-straightened during construction. Tie bars shall be deformed bars. Dowel bars shall be plain round bars. They shall be free from burring or other deformation restricting slippage in the concrete. Before delivery to the site of the work, a minimum of one half (1/2) the length of each dowel bar shall be painted with one coat of approved lead or tar paint.

The sleeves for dowel bars shall be metal of an approved design to cover 50 mm (2 inches), plus or minus 6.3 mm of the dowel, with a closed end, and with a suitable stop to hold the end of the sleeve at least 25 mm (1 inch) from the end of the dowel bar. Sleeves shall be of such design that they do not collapse during construction.

AASHTO M 31 – Use Reinforcing Steel bars Grade 40 (280 Mpa)

The work shall consist of placing of reinforcement bars in accordance with the Specification and Drawings.

REINFORCING STEEL (COLUMN)

Use 6 pieces of Bar No. 5 (16mm diameter) reinforcement bar on the main bars of the Column 1 with a lateral ties using Bar No. 3 (10mm diameter) the spacing of lateral ties are 3 ties with a 50mm spacing, 3 ties with a 100mm spacing, and the rest with a 200mm spacing. Use 4 pieces of Bar No. 5 (16mm diameter) reinforcement bar on the main bars of the Column 2 with a lateral ties using Bar No. 3 (10mm diameter) the spacing of lateral ties are 3 ties with a 50mm spacing, 3 ties with a 100mm spacing, and the rest with a 200mm spacing.

REINFORCING STEEL (TIE BEAM)

Use 4 pieces of Bar No. 4 (12mm diameter) reinforcement bar on the main bars of the Tie Beam with a lateral ties using Bar No. 3 (10mm diameter) with a spacing of 200mm.

REINFORCING STEEL (FOOTING)

Use 6 pieces of Bar No. 5 (16mm diameter) reinforcement bar on the Footing-1 with an even spacing on both ways. Use 4 pieces of Bar No. 4 (12mm diameter) reinforcement bar on the Footing-2 with an even spacing on both ways.

PLACING REINFORCEMENT

- a. All reinforcement shall be placed in accordance with the plans furnished by the Engineer. In case of any doubt or ambiguity in placing of steel, the contractor shall consult with the Engineer whose decision shall be final in such cases.
- b. All loose rust or scale, all adhering materials, and all oil or other materials which tend to destroy bond between the concrete and the reinforcement shall be removed before placing the steel and before concreting begins.

- c. Metal reinforcement shall be accurately placed and adequately secured by using annealed iron wire ties or suitable clips at intersection and shall be supported by concrete or metal supports, spaces or metal hangers. The minimum clear distance between parallel bars shall be one and one-half (1-1/2) times the diameter for round bars, and twice the side dimension for square bars. In no case shall the clear distance between bars be less than 25mm (1 in.) nor less than one and one-third (1-1/3) times the maximum size of the maximum aggregates. Where bars are used in two or more layers, the bars in the upper layer shall be placed directly above those in the lower layers at the clear distance of not less than 25mm (1 in.).
- d. Bends for stirrups and tie shall be made around a pin having a diameter no less than six (6) times the minimum thickness of the bar, except that for bars larger than 25mm (1 in.), the pin shall not be less than eight (8) times the minimum thickness of the bars. All bars shall be bend cold.
- e. Reinforcement steel shall not be straightened or re-bend in a manner that will injure the material. Bars with kinds or bends not shown on the drawing shall not be used. Heating of the reinforcement will be permitted only when approved by the Engineer.

OFFSETS AND SPLICES IN REINFORCEMENT

- a. In slabs, beams, and girders, splices of reinforcement at points of maximum stress be generally avoided, and may be allowed only upon written approval of splice details by the Engineer. Splices shall provide sufficient lap to transfer stress between bars by bonding shear or by butt welding to develop tension at least one hundred twenty-five percent (125%) of the specified yield strength of the reinforcing bars. Splices in adjacent bars shall be generally staggered.
- b. Where changes in the cross-section of a column occur, the longitudinal bars shall be offset in a region where lateral support is afforded. Where offsets, the slope of the inclined portion of the bars with the axis of the column shall not be more than one in six; in the case of tied columns, the ties shall be spaced not over 75mm (3 in.) on the centre for distance of 300mm (12 in.) below the actual point of offset unless otherwise shown on the plans.

6. CONCRETE WORKS

GENERAL

All concrete works shall be done in accordance with the standard specification for concrete materials as adopted by the Government and following proportions shall be used:

Class A (1:2:4) Footing, Column, and Tie Beam.

Class B (1:3:5) Slab on fill, Concrete Mortar and plaster.

Class A concrete has a compressive strength of 3000 psi - 3500 psi (21 Mpa - 24 Mpa) and Class B concrete has a compressive strength of 2500 psi – 3000 psi (17 Mpa) – 21Mpa).

ORDER OF PLACING CONCRETE

- a. The order of placing concrete in all parts of the work shall be subject to the approval of the Engineer. In order to minimize the effects of shrinkage, the concrete shall be done by placing alternate units in a manner such that each unit placed shall have cured at least seven (7) days before the contiguous unit or units are placed, except that vertical walls shall be placed until the wall footings have cured at least fourteen (14) days, and

the corner section of vertical wall shall not be placed until all the adjacent wall panels have cured at least fourteen (14) days.

- b. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 19.0mm (0.75 in.) thick shall be taken to the forms on these surfaces. The concrete shall be carried about 13.0mm (0.50 in.) above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be levelled with a trowel and all laitance shall be removed. Hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be levelled with a trowel and all laitance shall be removed.

TAMPING AND VIBRATING

- a. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted throughout the entire depth of the layer which is being consolidated, into a dense. Homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rocks pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement.
- b. Except to uniform provided herein, uniformed top surfaces of the concrete shall be brought to uniform surfaces and worked with suitable tools to a reasonably smooth wood float finish. Excessive floating at surfaces while the concrete is plastic will not be permitted. All surfaces shall be placed monolithically with the base slab. Dusting of dry cement and sand on the concrete surface to absorb excessive moisture will not be permitted. Floor slabs and exposed tops of walls and curbs shall be given a steel trowel finish. At the Contractor's option, the above mentioned floor slabs may be finished with a power float after screeding. Subsequent to aforementioned finish, all sloping surfaces of floor slabs shall be lightly broomed to provide a skid-resistant surface

7. MASONRY WORKS

GENERAL REQUIREMENTS

Concrete masonry unit work of the type indicated shall be provided and be properly coordinated with the work of other trades. The source of supply of materials, which will affect the appearance of the finished work, shall not be changed after the work has started.

SCOPE OF WORK

The work includes all labor, materials, tools, and equipment necessary to install concrete masonry and all appurtenant work in connection with the work as shown on the Drawings and as specified herein.

MATERIALS

- a. Concrete hollow blocks shall be standard machine vibrated and shall have fine and even texture and well-defined edges. Units shall be non-loaded bearing and shall conform to the requirements of ASTM Specifications C-129, with minimum compressive strength 2.45Mpa (350psi) (average of specimens). Samples shall be submitted to the Engineer for approval.
- b. Mortar and Grout. Mortar shall consist of one (1) part Portland cement, one-fourth (1/4) part lime putty, and three (3) parts mortar sand. Grout shall be the same materials and portion as mortar to which additional water shall be added to produce a consistency for pouring without segregation of the constituents. In concrete block wall construction a

portion of the sand may be replaced with pea gravel up to not more than two (2) parts by volume of the cement used. Such pea gravel shall be graded with not more than five percent (5%) passing the No.8 sieve and with 100 percent (100%) passing the 3/8-inch sieve.

- c. Cast-in place concrete lintels or beams shall be made from concrete having minimum 28-days compressive strength of 20.68Mpa (3000 psi) and in compliance with Division 21- Concrete works. Exposed surface shall have a smooth dense finished.
- d. Reinforcing steel bars shall conform to Division 21 – Concrete Works (See plan for bar arrangement and sizes).

LAYING CONCRETE MASONRY UNITS

WORKMANSHIP

Units shall be plumped and true to line with level horizontal joints. Hollow units shall be laid with full mortar coverage on horizontal and vertical face shells, and at least 50% of the cells shall be filled with grout, the cells containing vertical reinforcements to be among those to be filled up. All cells of CHB walls from footing up to at least the ground floor level shall be filled up. Solids units shall be laid with full head and bed joints. Joints shall be uniform and approximately 10mm wide unless otherwise indicated.

Unless otherwise shown on the drawings, joint of exterior concrete masonry units that will be exposed and painted shall be cut flush and tooled finished with a 6.5mm deep “V” joint for horizontal joints. Vertical joints between the horizontal joints shall be filled tooled flush. Joints of interior concrete masonry units shall be cut flush, and the blocks shall be given a cement plaster finish except as otherwise shown on the Drawings. The minimum thickness of cement plaster shall be 10mm.

SETTING EMBEDDED ITEMS

All anchor bolts and miscellaneous metalwork embedded in masonry shall be set in accordance with setting plans or instructions furnished by trades supplying the metalwork. Care shall be exercised to insure that all anchors are completely surrounded by grout.

MASONRY LINTELS

The Contractor shall provide properly shored supports for construction of masonry lintels for openings in walls. Shoring shall not be removed for at least seven days after lintels are placed.

PLACING REINFORCING BARS AND GROUTING

All reinforcing steel, except dowels in concrete, shall be accurately set in strict accordance with the Drawings and the note thereon. Vertical steel shall be secured firmly in place by means of frames or other suitable devices. Horizontal steel may be placed as the work progresses. In any core reinforcement, the distance between any masonry and the reinforcement shall be at least 12.7mm (1/2”) at all points. The masonry contractor shall furnish at all times, spacers and supports required to hold steel in position during grouting.

Cores shall be grouted in lifts not exceeding 1.22m (4 ft.) in height. Grout shall be thoroughly rodded. Splices in reinforcing bars shall be lapped at a distance sufficient to develop the stress in the bar, but not less than 40 bar diameter. Concrete hollow blocks shall be laid with all cells completely grouted from the wall footing up to the ground level. The rest of the concrete hollow blocks above ground shall have at least 50% of the cells grouted, including those containing the vertical reinforcements.

PROTECTION AND CLEANING

Corners shall be protected from damage, with substantial board covers. Mortar or grout stains on masonry work shall be removed immediately. Any masonry work showing strain from mortar or concrete, or grout at completion of work, shall be replaced of the entire masonry surface sand-blasted to provide uniform approved appearance. In clearing the block, only stiff fibre brushes and wooden scrapers shall be used. Metal implements or acids shall not be used for cleaning blocks. All perfect joining, nail holes, chipped edges of corners, and similar defects shall be correct re replaced as directed.

8. STEEL WORKS

GENERAL

- a. The Contractor shall furnish, fabricate, and install all steel and miscellaneous metal work as specified herein and as show in the drawings. Miscellaneous metalwork is defined as all item required to be fabricated from structural steel shapes, plates, bars, and their products. He shall provide the necessary labour, supervision, tools, materials, supplies, and appurtenances for the proper construction and operation of the elevated steel reservoir. The Contractor shall be accomplished the work in a complete and finished manner and insure the highest quality or workmanship in accordance with the drawings and specification and to be satisfactions and to the satisfaction of the Engineer.
- b. Structural steel straps, plates, bars and their products shall conform to the “Standard Specification for Structural Steel” (ASTM Designation A36).
- c. Unless otherwise shown, all miscellaneous metal work of fabricated steel shall be galvanized after fabrication in accordance with the section 22.03. Unless otherwise indicated, stainless steel metalwork shall be of Type 18-8 stainless steel. Items fabricated stainless steel shall not be galvanized.
- d. All materials to be used shall be new, previously unused, and in first condition. Steel materials of unidentified analysis may be used provided they are tested and properly certified by a qualified testing laboratory.
- e. Painting of shall metalwork, unless otherwise specified shall be in accordance with Division 27, “Painting and Coating”.
- f. Testing and disinfecting shall be undertaken as specified in Division 25, “Pressure and Leakage Testing and Disinfecting”.
- g. Shop drawings for all steel and miscellaneous metalwork shall be submitted to the Engineer for review in accordance with Section 7.02, “Shop Drawings”.
- h. The work and equipment to be provided by the Contractor under this Contract shall conform to the U.S. Standards as mentioned in the following articles or to any International Standards of equal value.
- i. Welding terms used in this specification shall be interpreted according to the definition given in AWS A3.0.

MATERIALS

STRUCTURAL SHAPES

All structural shapes for use shall be produced by the open-hearth, basic oxygen, or electric-furnace process. Open or non-tubular structural shapes shall conform to ASTM A36. When structural shapes are fabricated from steel plates, the plates shall conform to item (b).

PLATES

Plates materials shall be open-hearth, electric-furnace, or basic oxygen process steel conforming to the latest revision of any of the following applicable ASTM specification: A36; A131, Grade A and B; A283, Grade A, B, C and D; or A573, Grade 58.

ANCHOR BOLTS, RODS, AND REINFORCING STEEL

1. The Contractor shall furnish and set all bolts, anchor bolts, rods and reinforcing steel. Except where otherwise shown or specified, all bolts, anchor bolts, washers, and nuts shall be steel, galvanized after fabrication in accordance with Section 22.02.
2. Except as otherwise provided herein, steel for bolts, anchor bolts, cap screws shall be in accordance with "Specifications for Low Carbon Steel Externally and Internally Threaded Standard Fastener", Grade B (ASTM Designation A307), or "Specification for Carbon Steel Bars Subject to Mechanical Property Requirements" (ASTM Designation A306) or threaded parts of ASTM A36 and shall meet the additional requirements: (1) the nut material shall be Coarse Thread Series conforming of the requirements of the American Standard for Screw Threads. All bolts and cap screws shall have hexagon heads, and nuts shall be Heavy Hexagon Series.
3. Threads of galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain the normal clearance after hot-dip galvanizing.
4. Unless otherwise shown, all bolts, anchor bolts and nuts which are buried, submerged, or inside a covered hydraulic structure shall be Hot-Dip galvanized as per TS-20 and then coated with two coats of coal tar epoxy after installation.

GALVANIZING

All structural steel plates, shapes, bars, and fabricated assemblies required to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the "Specification for Zinc (Hot-Galvanized) Coating on Products Fabricated from Rolled, Pressed and Forged Steel Shapes, Plates, Bars, and Strip" (ASTM A123). Any galvanized part that becomes warped during the galvanizing operation shall be straightened. Bolts, anchor bolts, nuts and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the "Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware" (ASTM A153). Field repairs to galvanizing shall be made using "Galvano", "Galvo-Weld", or approved equal.

SHOP FABRICATION STEEL WORKS

FINISH OF PLATE EDGES-WELDED WORK

The plate edges to be welded may be universal mill edges or they may be prepared by shearing, machining, chipping, or by mechanically guided oxygen or plasma arc cutting. Edges of irregular contour may be prepared by manually guided oxygen or plasma arc cutting.

1. Oxygen or plasma arc cutting. When edges of plates are oxygen or plasma arc cut, the surface obtained shall be uniform and smooth and shall be cleared of slag accumulated before welding. All cutting shall follow closely the lines prescribed.
2. Shearing, Shearing may be used for material 13mm (1/2 in.) or less in thickness to be joined by butt joints, and for all thickness of materials permitted to be joined by lap joints.

SHIPPING/TRANSPORTING

All materials shall be loaded, transported to the site, unloaded and stored in such a manner as to prevent damage.

WELDING

GENERAL

All welding shall be the shielded arc method and shall conform to the AWS "Code for Arc and Gas Welding in Building Construction". Qualification of welder shall be in accordance with the specification for Standard Qualification Procedure of the AWS.

BUTT JOINTS

1. All welding in Butt Joints shall be complete joint penetration welds, which may be double welded from both sides or welded from one side only using a backing strip or equivalent means to ensure complete joint penetration welds. Butt joints may be used for welding all thickness of material permitted to be welded under this specification.
2. Butt joints may be used for welding all thickness of materials permitted to be welded under this specification.

LAP JOINTS

1. Shall have continuous full fillet welds on both edges of the joints. The maximum thickness permitted for this type shall be 13mm (1/2 in.)
2. In any case, welded lap joints, except when show on the plans, shall be lapped not less than five times the nominal thickness of the thinner plate joined (5T); but in the double-welded lap joint, the lap need not exceed 50mm (2 in.), and in single-welded lap joints, the lap need not exceed 25mm (1 in.).

MINIMUM SIZE OF FILLET AND SEAL WELDS

1. **Fillet Welds:** Plates 5mm (3/16 in.) and less in thickness shall have full fillet welds. Plates more than 5mm (3/16 in.) thick shall have welds of a size not less than one-third the thickness of the thinner plate at the joint, with a minimum of 5mm (3/16 in.).
2. **Seal Welds:** Seal welding, when desired, shall be accomplished by a continuous weld combining the function of sealing and strength, changing section only as the required strength may necessitate.

MINIMUM LENGTHS OF WELDS

The minimum lengths of many welds shall be four times the size but not less than 38mm (1-1/2 in.), or else the size of the weld shall be considered not to exceed one or fourth of its length.

The effective length of the fillet weld shall not include the length of the tapered ends. A deduction of at least 6.35mm (1/4 in.) shall be made from the overall length as an allowance for tapered ends.

SAFETY IN WELDING AND CUTTING

Operation involving welding, cutting, brazing, or allied processes shall be conform to ANSI Z49.1 for the protection of welders, welding operation, and nearby personnel.

SAFE USAGE OF CUTTING AND WELDING PROCESSES

Procedures shall conform to ANSI Z491.1 (NFPA 51B) for the prevention of fire and property damage.

BOLTS

- a. The Contractor shall furnish and set all bolts and anchor bolts. Except where otherwise shown or specified, all bolts, anchor bolts, washers, and nut shall be steel, galvanized after fabrication.
- b. Except as otherwise provided herein, steel for bolts and cap screws shall be in accordance with "Specification for Carbon Steel Externally and Internally Threaded Standard Fasteners", Grade B (ASTM Designation A-307), or "Specifications for Carbon Steel Bars Subjects to Mechanical Property Requirements" (ASTM Designation A-306) or threaded parts ASTM A36 and shall meet the following additional requirements: (1) the nut materials shall be free-cutting steel, and (2) the nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standard for Screw Threads. All bolts and cap screw shall have hexagon heads and nuts shall be Heavy Hexagon Series.
- c. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they remain the normal clearance after hot-dip galvanizing.

9. ROOFING WORKS

The Roofing Sheets shall be pre-painted long span with a thickness of 0.40mm. It shall be free from rust. Provide 10mm thick PE foam installation with (1) side aluminum foil for thermal control.

Each sheet shall be laid on steel purlins. Succeeding upper rows of sheets shall be installed in the same manner until the entire roof area is covered. Screw holes shall be drilled using a 5mm (13/64") diameter bit. Sheets should be handled carefully to prevent damage.

Ridge and hips shall be bolted with at least 250mm lap placed over the roofing sheets on either side to prevent the rain driving under it and together shall be riveted at every second corrugation.

Holes in sheets shall be made on the ground, the sheets shall be placed on trestles and holes punched in the ridge of corrugations from below upward. Unnecessary holes made on the roof shall be rejected.

10. ELECTRICAL WORKS

The electrical installation shall be done following the approved plans and under the direct supervision and control of a Professional Electrical Engineer and or Registered Electrical Engineer.

All works shall be done following the latest edition of the Philippine Electrical Code (PEC). The rules and regulations of the local enforcing authorities with the enforcement of rules and regulations of the local utility company.

Branch circuit home runs shall not be combined in the same raceway and raceway for auxiliary lines shall not contain power lines.

The electrical wiring installation shall be in Unplasticized Polyvinyl Chloride (UPVC), Electrical Metallic Tubing (EMT) for branch circuit, Rigid Steel Conduit (RSC) or raceway for service entrance and power feeder.

Mounting heights of wiring devices and panelboards shall be as follows:

- *Convenient Outlets300mm AFFL
- *Light Switches1400mm AFFL
- *Panel Boards.....1800mm AFFL
- *Telephone Outlets.....300mm AFFL

Whenever necessary pull boxes shall be used when applicable for easy pulling of wires and shall be in accordance with code requirements even not indicated in the plan.

All wires to be used shall be copper and thermoplastic heat-insulated type (THHN), unless noted otherwise specified.

All materials to be used shall be brand new and of an approved type for the location and purpose intended.

The minimum size of wire and conduit to be used shall be 3.5 sq.mm THHN and 20mm diameter UPVC/EMT/RSC respectively.

All service entrance equipment such as the panelboard shall be properly grounded per the provision of the Philippine Electrical Code (PEC).

The contractor shall provide all materials, labor, and equipment for the installation of complete electrical systems as shown on the plans.

Service entrance shall be over-head and provided with single phase 220 volts for the entire systems.

Installations shall only follow circuit numbers with remarks "Phase 1" from the Schedule of Loads.

Electrical lightings shall be a LED fluorescent lamp and downlights/cove lights at hallways.
The grounding wires shall be color-coded for easy identification.

11. PAINTING

The contractor shall furnish all labor, tools, and materials necessary for the painting of all woodworks, concrete and masonry works, metal works, varnishing works, and all other painting work specified by the PoWD Engineer with the concurrence of the End User/Owner.

All painting materials shall be delivered on-site intact in the original drums or tins and shall be mixed and applied strictly in accordance with the manufacturer's instructions and to the approval of the Project Engineer. All latex and enamel paints shall be applied by brush and roller.

The Metal body shall be painted with three (3) coats of enamel paint including an epoxy primer paint.

All Concrete Pedestal shall be painted with three (3) coats of latex paint.

The Engineer shall refer the color scheme for approval to the Owner.

12. CODES, PERMITS, CERTIFICATE OF FINAL INSPECTION AND APPROVAL

The installation specified herein shall comply with all laws and regulations applying to the electrical installation in the effect of the latest approved edition of the local utility company concerned. The Owner - PoIWD shall obtain at his own expense all permits required by the government approving authorities.

Likewise, Construction and safety program shall be registered with DOLE at the constructor's expense including occupancy permit shall be secured after the construction of the building has been completed or before occupying the building for its approved use. The contractor or his duly authorized representative shall secure all necessary permits and pay the corresponding fee of the same to the office of the Building Official of the locality.

A Three (3) copy of the as-built drawings for structural/architectural, plumbing, and electrical plan shall be furnished signed and sealed by the in charge of the construction including the soft copy in AutoCAD File.

NOTE: All additional activities which are not indicated or specified on the plan but related to the Scope of Works to complete the projects shall be done by the Contractor without any additional cost to PoIWD.

Section VII. Drawings

Section VIII. Bill of Quantities

Notes on the Bill of Quantities

Objectives

The objectives of the Bill of Quantities are:

- a. to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and
- b. when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

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

Daywork Schedule

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

- a. A list of the various classes of labor, materials, and Constructional Plant for which basic daywork rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a daywork basis.
- b. Nominal quantities for each item of Daywork, to be priced by each Bidder at Daywork rates as Bid. The rate to be entered by the Bidder against each basic Daywork item should include the Contractor's profit, overheads, supervision, and other charges.

Provisional Sums

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

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

Signature Box

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

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

Section VIII. Bill of Quantities

ITEM	DESCRIPTION	QTY.	UNIT
1.0	GENERAL REQUIREMENTS		
	Temporary Site Facilities	10	sq.m
	Occupational Safety and Health Program	1	ls
	Mobilization and Demolition	1	ls
2.0	CLEARING & GRUBBING	108.99	sq.m.
3.0	EARTHWORKS	16.47	cu.m.
4.0	FORMWORKS AND FALSEWORKS	11.20	sq.m.
5.0	REINFORCEMENTS	944.50	kgs
6.0	CONCRETING WORKS	15.65	cu.m.
7.0	MASONRY WORKS	92.51	sq.m.
8.0	METAL WORKS	1,566.09	kgs
9.0	PAINTING WORKS	1	ls
10.0	ROOFING WORKS	136.34	sq.m.
11.0	ELECTRICAL WORKS	1	lot

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

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

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

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

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class “A” Documents

Legal Documents

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

Technical Documents

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

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

Financial Documents

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

Class "B" Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

- (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (q) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- (r) Cash Flow by Quarter.