BIDDING DOCUMENTS

FOR THE

SUPPLY OF LABOR AND MATERIALS FOR THE PROPOSED STRUCTURAL RETROFITTING OF THE SEC HEADQUARTERS

Public Bidding No. 2023-041

Sixth Edition
July 2020

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 ad measurements (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.

TABLE OF CONTENTS

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.
ARCC – Allowable Range of Contract Cost.
BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.
BSP – Bangko Sentral ng Pilipinas.
CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.
DOLE – Department of Labor and Employment.
DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as

specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.
NFCC – Net Financial Contracting Capacity.
NGA – National Government Agency.
PCAB – Philippine Contractors Accreditation Board.
PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.
SEC – Securities and Exchange Commission.
SLCC – Single Largest Completed Contract.
UN – United Nations.

Section I. Invitation to Bid

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.

Invitation to Bid

1. The **Securities and Exchange Commission (SEC)**, through the **FY 2023 Annual Operating Budget of SEC,** intends to apply the sum of **One Hundred Forty-nine Million Four Hundred Fifty-six Thousand Four Hundred Seventy-one Pesos (Php 149,456,471.00)** being the Approved Budget for the Contract (ABC) to payments under the contract for **Supply of Labor and Materials for the Proposed Structural Retrofitting of the SEC Headquarters** under **Public Bidding No. 2023-041**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The **SEC** now invites bids for the above Procurement Project. Completion of the Works is required within **ten (10) months from the issuance of the Notice to Proceed or from the date stated therein**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

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

4. Interested bidders may obtain further information from the SEC and inspect the Bidding Documents at the address given below from 8:00AM to 5:00PM.

5. A complete set of Bidding Documents may be acquired by interested bidders on November 17, 2023 from given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Fifty Thousand Pesos (Php 50,000.00).** The Procuring Entity shall allow the bidder to present its proof of payment for the fees physically or electronically.

   Prospective bidders are advised to send an email at **nmdelasalas@sec.gov.ph** and **retestano@sec.gov.ph** to request for the Payment Assessment Form (PAF), which shall be used for the payment of the abovementioned applicable fee.

   Payments should be done over the counter at any Landbank branch nationwide or online through eSPAYSEC.

   For over-the-counter payment at LandBank:
   - Print 2 copies of PAF:
     - 1 Client Copy
     - 1 LandBank Copy
   - Accomplish the on-Call Payment slip per fund account as indicated on the breakdown summary.
   - Use the correct Fund Account and Account No. and provide the below information:

- Reference Number 1 - PAF No.
- Reference Number 2 - Name of Payor appearing on the PAF

- Present On Call Payment Slip, together with the PAF, to the LandBank Teller

For online payment:

- Access eSPAYSEC through the link below, enter PAF Reference Number, select your payment: **https://www.sec.gov.ph/sec-payment-portal**
- Enter PAF Reference Number
- Select preferred payment option:
  - Debit/Credit Card
  - Paymaya Wallet/GCash
- Enter email address and verification code
- Click proceed to payment

6. The SEC will hold a Pre-Bid Conference on **November 24, 2023 (Friday) 10:00A.M.** at **HRAD Conference Room, 7th/F, The SEC Headquarters, 7907 Makati Avenue, Salcedo Village, Bel-Air, 1209 Makati City** and/or through video conferencing or webcasting via zoom, which shall be open to prospective bidders.

   The prospective bidders are advised to send email at **nmdelasalas@sec.gov.ph** and **retestano@sec.gov.ph** for the link to join the meeting which will be provided before the scheduled Pre-Bid Conference.

7. Bids must be duly received by the BAC Secretariat through manual submission at the **Procurement Division, 7th/F The SEC Headquarters, 7907 Makati Avenue, Salcedo Village, Barangay Bel-Air, Makati City**, on or before, **December 11, 2023 (Monday) 10:00A.M.** Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.

9. Bid Opening shall be on **December 11, 2023 (Monday) 10:15 A.M. at HRAD Conference Room, 7th/F, The SEC Headquarters, 7907 Makati Avenue, Salcedo Village, Bel-Air, 1209 Makati City.**

10. Each Bidder shall submit one **(1) set** of the first and second components of its bid. Bidders must arrange each bid document into sections with tabs properly labeled separating each document according to the provided checklist.

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

12. For further information, please refer to: SEC BAC Secretariat

    Procurement Division
    Human Resource and Administrative Department
    7/F The SEC Headquarters, 7907Makati Ave.

Salcedo Village, Bel-Air, 1209 Makati City
Telephone No.: 8818-5330
Email Address: ***nmdelasalas@sec.gov.ph***; ***retestano@sec.gov.ph***

13. You may visit the following websites to download the Bidding Documents:

https://www.sec.gov.ph
https://www.philgeps.gov.ph

November 17, 2023

ARMANDO A. PAN, JR
Chairman, BAC

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, SEC, invites Bids for the **Supply of Labor and Materials for the Proposed Structural Retrofitting of The SEC Headquarters** with Project Identification Number: **Public bidding No. 2023-041.**

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 FY 2023 in the amount of **One Hundred Forty-Nine Million Four Hundred Fifty-Six Thousand Four Hundred Seventy-One Pesos (Php 149,456,471.00)**

2.2. The source of funding is through the authorized appropriations under the approved **FY 2023 Annual Operating Budget of SEC.**

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. 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

The Procuring Entity has prescribed that sub-contracting 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 at **Conference Room, 7th/F SEC Headquarters, 7907 Makati Avenue, Salcedo Village, Barangay Bel-Air, 1209 Makati City** 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.

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 Peso.

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 for **120 Calendar Days** reckoned from 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 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 10 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

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

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

19. Detailed Evaluation and Comparison of Bids

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

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

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

<table>
<tr><th>ITB Clause</th><th></th></tr>
<tr><td>5.2</td><td>Statement of the Bidder's Single Largest Completed Contract (SLCC) similar to the requirement shall be any project that involves STRUCTURAL RETROFITTING, and in the amount of at least 50% of the Approved Budget for the Contract.</td></tr>
<tr><td>7.1</td><td>Not Applicable</td></tr>
<tr><td>10.3</td><td>Current Valid PCAB License and Registration for "General Building" with at least "Medium B" (size range), License Category A</td></tr>
<tr><td>10.4</td><td>The key personnel must meet the required minimum years of experience set below:
<table>
<tr><th>Personnel</th><th>Professional Qualification/s</th></tr>
<tr><td>One (1) Project Manager (PM)</td><td>Registered Civil Engineer or Architect with at least Seven (7) years of experience in the construction industry</td></tr>
<tr><td>One (1) Project/On-site Engineer</td><td>Registered Civil Engineer with at least Seven (7) years of experience in the construction industry.</td></tr>
<tr><td>One (1) Safety Officer</td><td>▪ Certified by an accredited safety organization in Construction Occupational Safety and Health as prescribe by Department of Labor and Employment; and
▪ With at least Seven (7) years of experience as Safety Officer in the construction industry</td></tr>
<tr><td>One (1) Materials Engineer</td><td>Registered Civil Engineer with at least five (7) years of experience in the construction industry</td></tr>
<tr><td>One (1) Foreman</td><td>With at least Seven (7) years of experience as Foreman in the construction industry</td></tr>
</table>
Each of the contractor's Key Personnel must be supported by the following documents:

For PM/Project Engineer/Materials Engineer:
a. Curriculum Vitae;
b. Valid Professional Identification Card issued by the Professional Regulation Commission</td></tr>
</table>

	If for Renewal, submit a copy of the following: a. Recently expired Professional Identification Card; and b. Official Receipt as proof of payment for the application for renewal For Safety Officer: a. Curriculum Vitae; b. Certificate of Training on Construction Occupational Safety and Health issued by a DOLE-accredited training center For Foreman: a. Curriculum Vitae
10.5	Not applicable
12	Not Applicable
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than **Php 2,989,129.42 or *(2%) of ABC*,** if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than **Php 7,472,823.55 or *(5%) of ABC*,** if bid security is in Surety Bond.
19.2	Partial bids are not allowed
20	The bidder with the Lowest Calculated Bid shall submit **ALL** of the following post-qualification requirements: 1. Latest Income and Business Tax Returns, filed and paid through the Electronic Filing and Payments System (EFPS), consisting of the following: i. Latest Income Tax Return with proof of payment; and ii. VAT Returns (Form 2550M and 2550Q) or Percentage Tax Returns (2551M) with proof of payment within the last six (6) months.
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as **Construction schedule** and **S-curve, Manpower schedule, Construction methods, Equipment utilization schedule, Construction safety and health program approved by the DOLE**, and other acceptable tools of project scheduling.

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	Completion Period: The contractor shall complete and turn-over the project within **Ten (10) months** from the issuance of the Notice to Proceed or from the date specified therein.
4.1	Possession of the Site shall be given to the Contractor as specified in the SEC Scope of Works and Specifications and SEC Approved Plans and Drawings.
6	No further instruction
7.2	The Contractor shall guarantee the works done to be free from defects for a period of one (1) year reckoned from the date of acceptance of the project. The warranty shall be covered by retention money. FORM OF WARRANTY SHALL BE IN ACCORDANCE WITH THE PROVISIONS UNDER SECTION 62.2 OF THE 2016 REVISED IMPLEMENTING RULES AND REGULATIONS OF REPUBLIC ACT NO. 9184
10	Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall be required to submit to SEC within **ten (10) calendar days** from receipt of the Notice of Award the following additional project requirements: a. Construction Schedule b. S-Curve c. PERT-CPM d. Manpower Schedule and List of Equipment e. Construction Methodology in Narrative From
11.2	The amount to be withheld for late submission of an updated Program of Work is one percent (1%) of the gross amount due for payment.
13	The amount of the advance payment/mobilization fee is 15% of the total contract price. 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. The advance payment shall be made only upon the submission to and acceptance by the procuring entity of an irrevocable standby letter of credit of equivalent value from a commercial bank, a bank guarantee or a

	surety bond callable upon demand, issued by a surety or insurance company duly licensed by the Insurance Commission and confirmed by the procuring entity. The advance payment shall be repaid by the contractor by deducting fifteen percent (15%) from his periodic progress payments a percentage equal to the percentage of the total contract price used for the advance payment. The contractor may reduce his standby letter of credit or guarantee instrument by the amounts refunded by the Monthly Certificates in the advance payment.
14	**Payment Schedule:** Mobilization Fee/ Advance Payment – 15% of Contract Cost 1st Progress Billing - at least 30% (actual accomplishment) 2nd Progress Billing - at least 50% (actual accomplishment) 3rd Progress Billing – at least 75 % (actual accomplishment) 4th and Final Billing – 100% completion 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 and "as built" drawings shall be submitted upon date of completion.
15.2	The amount to be withheld for failing to submit and secure acceptance and approval of "as built" drawings and/or operating and maintenance manuals by the date required is two percent (2%) of the Contract Price.

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.

EXCAVATION, BACKFILL, FILL, GRADING AND SLOPE PROTECTION

15.3. PART 1 – GENERAL

1.1 SCOPE OF WORK

The Work includes furnishing all labor, materials, equipment and incidentals necessary to perform all excavation, backfilling, filling, grading, and slope protection as shown on the Drawings.

1.2 RELATED SECTIONS

Other Sections of the Specifications shall also apply to the extent required for proper performance of this Work.

Section 33001	Site Preparation
Section 33003	Yard Piping
Section 33004	Roadways and Paving
Section 33006	Loaming and Seeding
Section 33007	Waste Water Disposal System

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicated, the current editions of the following Standards apply to the WORK of this Section:

ASTM D698	Laboratory Compaction Characteristics of Soil Using Standard Effort
ASTM D1556	Density of Soil in Place by the Sand Cone Method
ASTM D1557	Laboratory Compaction Characteristics of Soil Using Modified Proctor Test
ASTM D2487	Classification of Soils for Engineering Purposes (Unified Soil Classification System)

1.4 SUBMITTALS

A. Proposed methods of construction including dewatering, excavation, sheeting, bracing, filling, compaction and backfilling for the various portions of the project.

B. Samples as required by the applicable Reference Standards and under Part 2

– PRODUCTS of this Specification

1.5 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that materials conform to the specifications, and to be paid for by the Contractor.

1.6 PROTECTION

A. Sheeting and Bracing – General

1. The Contractor shall furnish, put in place and maintain such sheeting and bracing as may be required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures from undermining or other damage. If, in the opinion of the Engineer, sufficient or proper supports have not been provided, additional supports shall be put in at the expense of the Contractor. The Contractor is responsible for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled with compacted granular fill and rammed.

2. The Contractor shall leave in place all sheeting and bracing which the Engineer may direct him in writing to leave in place at any time during the progress of the Work for the purpose of preventing injury to structures, utilities or property, whether public or private.

3. All sheeting and bracing not to be left in place shall be carefully removed in such a manner as not to endanger the construction of other structures, utilities or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with compacted granular material by ramming with tools especially adapted to that purpose, or by other means as approved.

4. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability to damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

5. No wood sheeting shall be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any wood sheeting be cut off at a level lower than one foot above top of any pipe.

B. Pumping and Drainage

1. The Contractor shall at all times during construction, provide and maintain proper equipment and facilities to remove all water entering excavations. Excavations shall be kept dry so as to obtain a satisfactory undisturbed sub-grade foundation until the fills or structures to be built thereon have been completed to such extent that they will not be floated or damaged by allowing water levels to return to natural levels.

2. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the sub-grade soils at proposed bottom of excavation.

3. The Contractor shall maintain the water level below the bottom of excavation in the various work areas continuously. The Contractor's proposed method of dewatering, if required, shall be approved by the Engineer.

4. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.

5. The Contractor shall take all additional precautions to prevent uplift of any structure during construction. All such arrangements shall be subject to the approval of the Engineer.

6. Drainage shall be disposed of in an approved area only so that flow or seepage back into the excavated area will be prevented.

7. Floatation shall be prevented by the Contractor by maintaining a positive and continuous removal of water. The Contractor shall be fully responsible and liable for all damages that may result from failure to adequately keep excavations dewatered.

8. Removal of dewatering equipment, if required, shall be accomplished after the system is no longer required; the material and equipment constituting the system shall be removed by the Contractor.

PART 2 – PRODUCTS

2.1 MATERIALS

A. General

1. Excess materials which have been excavated and stockpiled in selected areas on the site which meet the Specifications shall be used as much as possible for fills.

2. For both materials obtained on site and for materials obtained off-site, the Contractor shall notify the Engineer of the source of the material and shall furnish the Engineer for approval, a representative sample weighing approximately 25 kilograms, at least ten calendar days prior to the date of anticipated use of such material. Samples shall be resubmitted as required until approval is obtained.

B. Fill

1. Common Fill

Common fill may be obtained from on-site excavated material if approved by the Engineer or from off-site sources. Common fill shall consist of mineral soil, substantially free of clay, organic material, silt, loam, wood, trash, and other objectionable material which cannot be compacted properly.

Common fill shall not contain broken concrete, masonry, rubble, asphalt pavement, or other similar materials. It shall have physical properties such that it can be readily spread and compacted during filling.

Common fill shall not contain stones larger than 250mm in any dimension, nor stones larger than 150mm in the upper 0.50 meter of fill. Not more than 30% shall pass a No. 200 sieve. The liquid limit of the fraction passing a No. 40 sieve shall not exceed 50%.

2. Structural Fill

Structural fill shall be furnished and placed as required to replace materials encountered and found unsuitable below foundation elevation of structures; or when foundation elevation is set above existing grade as shown on the plans or directed by the Engineer in writing. Structural fill shall be used below all structures that have under drains as shown on the Drawings.

Structural fill shall consist of suitably graded clean sands or gravel-sand mixtures belonging to Group Symbol SW or GW of the Unified Soil Classification, ASTM D2487. Particles shall be sound and not more than 15% shall pass the No. 200 sieve, nor more than 50%, the No. 40 sieve.

The composite material shall be non-plastic and free from organic matter, clay lumps, or other deleterious materials.

3. Granular Fill

Granular fill material shall consist of hard, durable, free draining sand and gravel or hard stone; shall be free from organic matter or other deleterious substances and shall be reasonably well-graded within the following limits:

Size	Per Cent by Weight Passing
75mm (3 in.)	100
0.60mm (No. 30)	0-20
0.15mm (No. 100)	0-5

4. Screened Gravel

   Screened gravel shall consist of hard, durable, rounded or sub-angular particles of proper size and gradation, and shall be free from sand, loam, clay, excess fines, and deleterious materials. Screened gravel shall be graded within the following limits:

Sieve Size	Per Cent by Weight Passing
16mm (5/8 in.)	100
13mm (1/2 in.)	40-100
10mm (3/8 in.)	15-45
2.0mm (No. 10)	0-5

PART 3 - EXECUTION

3.1 STRIPPING AND GRUBBING

Before any fills are placed or any paving or construction started, the area of all such work shall be stripped and grubbed of all top organic materials to a minimum depth of 150mm. Any weak, loose, soft, spongy, or otherwise unsuitable materials shall be removed from the site, and may be deposited in a spoil area, as directed by the Engineer, but shall not be used in any on-site fills.

3.2 EXCAVATION

Excavation shall include, without classification, the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the Work. The removal of said materials shall conform to the lines and grades shown on the Drawings.

The Contractor shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations, and all pumping, ditching, or other approved measures for the removal or exclusion of water, including taking care of

storm water reaching the site of the Work from any source so as to prevent damage to the Work or adjoining property.

Excavations shall be sloped or otherwise supported in a safe manner in accordance with the latest applicable safety requirements of the Department of Public Works and Highways and as approved by the Engineer.

A. Excavation Below Grade

1. If the bottom of any excavation is taken out below the limits specified on the Drawings, or directed by the Engineer, it shall be refilled at the Contractor's expense with concrete, compacted structural fill, or other material satisfactory to the Engineer.

2. Compacted structural fill, when used for refill, shall be placed in not greater than 150mm layers.

B. Structure Excavation

1. Excavation for structures to be founded on base slabs and footings are intended to be carried to undisturbed natural soil of suitable approved bearing capacity. If, upon uncovering and in the opinion of the Engineer, the material at or below the normal grade of excavation as indicated on the Drawings, is unsuitable for the support of structures, such material shall be over excavated and replaced with compacted structural fill. The Contractor will be paid based on unit price established in the Schedule of Bid Prices.

2. Excavation, including removal of rock and boulders, shall be made to such lines and grades as will give suitable room for buildings and structures, for bracing and supporting, pumping and draining, and to the limits indicated on the Drawings. The bottom of the excavations shall be rendered firm and dry and in all respects acceptable to the Engineer.

3. Excavation and dewatering shall be accomplished by methods which preserve the undisturbed state of subgrade soils. Subgrade soils which become soft, loose, "quick", or otherwise unsatisfactory for support of structures as a result of inadequate excavation, dewatering or other construction methods, shall be removed and replaced by compacted structural fill at the Contractor's expense.

4. Dewatering shall be such as to prevent boiling or detrimental under seepage at the base of the excavation. The Contractor shall install such means as required to preserve the stability of the base of the excavation.

5. Excavating equipment shall be satisfactory for carrying out the work in accordance with the Specifications.

6. When excavation for foundations has reached prescribed depths, the Engineer shall be notified and he will inspect conditions. If materials and

conditions are not satisfactory to the Engineer, the Engineer will issue instructions as to the procedures, and if additional costs are involved, adjustments of the Contract will be made on the basis of unit prices agreed upon by the Engineer and the Contractor in accordance with the provisions of the Contract Documents.

C. Miscellaneous Excavation

The Contractor shall perform all the remaining miscellaneous excavation. He shall make all excavations necessary to permit the placing of loam and plants, for constructing roadways, and any other miscellaneous earth excavation.

3.3 FILL AND COMPACTION

A. General

1. Fills shall be placed as shown on the Drawings or as directed by the Engineer. Where embankments are to be placed and compacted on hillsides, or to be placed against existing embankment, or to be built one half at a time, the slopes of original hillsides, existing embankments, or new fill shall be cut into or benched in order to accommodate each layer of new work a horizontal distance of not less than 1.5 meters. Materials thus removed shall be spread and compacted with the new materials.

2. Compaction shall be performed as specified hereinafter for the particular materials and operations:

   a) A pass shall be one complete coverage of the area to be compacted by the rear wheel tire treads or tractor treads in contact with the flat earth surface.
   b) Areas adjacent to structures and other areas inaccessible to a roller or truck shall be compacted with approved mechanical compaction equipment. Compaction of the fill by such means shall be to the same degree of compaction as obtained by other approved equipment. The Engineer may make the necessary tests to determine the amount of compactive effort necessary to obtain equal compaction. The fill compacted by mechanical compactors shall be placed in 150mm layers and thoroughly tamped over the entire surface. Compaction equipment is subject to approval by the Engineer.

3. The surface of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated, and no soft spots or un compacted areas will be allowed in the Work.

4. Temporary bracing shall be provided as required during filling and backfilling of all structures to protect partially completed structures against all construction equipment loads, hydraulic pressures, and earth pressures.

B. Placing Structural Fill

1. After all unsuitable materials have been stripped and removed, the area to be filled shall be compacted by rolling using pneumatic tire rollers or tandem rollers of capacity approved by the Engineer. Moisture content of the material in situ should be dry to the optimum. The Engineer shall conduct density test on the compacted base. At least 95% of modified proctor maximum density (ASTM D1557, Method C) must be attained.

2. Fill shall be spread by graders or bulldozers and compacted in layers not thicker than 150mm.

3. Compacted structural fill shall be placed and compacted as specified laterally to the limits defined by a 1 on 1 line sloped outward and downward from a point at least 0.7 meters outside the bottom edge of all footings.
4. Water shall be added by means of sprinklers to each layer in amounts that will bring the fill material to its optimum density. Compaction will not be permitted on completely dry materials.

5. A minimum of two coverage is required for each layer. The Engineer may, during the progress of the work, conduct tests as to the degree of compaction of the fill and may require additional passes when density of the fill has not reached 95% of modified proctor dry density (ASTM D1557, Method C).

6. In areas inaccessible to the large rollers, hand-held tampers shall be used in which case, maximum layer heights shall be 0.15 meter when compacted or as required to achieve 95% of modified proctor dry density.

C. Backfilling – Common Fill

1. Common fill may be used as backfill against the exterior walls of structures or in other areas as designated by the Engineer. Common fill materials shall be placed in layers having maximum thickness of 300mm measured before compaction. Moisture content of the material at the start of compaction shall be at or near optimum.

2. Common fill shall be compacted to at least ninety per cent of maximum density as determined by ASTM D698.

3. Materials placed in fill areas shall be deposited to the lines and grades shown on the Drawings, making due allowance for settlement of the material and for the placing of loam thereon.

4. The surfaces of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated on the grading plan. No soft spots or uncompacted areas will be allowed in the Work.

5. No compaction shall be done when the material is too wet either from rain or from excess application of water.

3.4 GRADING

A. Grading in preparation for placing of loam, planting areas, paved walks and roadways, and appurtenances shall be performed at all places that are indicated, to the lines, grades, and elevations shown on the Drawings or as directed by the Engineer. All material encountered of whatever nature within the limits indicated, shall be removed and disposed of. During the process of grading, the sub-grade shall be maintained in such condition that it will be well drained at all times. When directed, temporary drains and drainage ditches shall be installed to intercept or divert surface water that may affect the condition of the Work.

B. If at the time of grading, it is not possible to place any material in its proper section of the permanent structure, it shall be stockpiled in approved areas for later use. No extra payment will be made for the stockpiling or double handling of excavated material.

C. The right is reserved to make minor adjustments or revisions in lines or grades, if found necessary as the work progresses, due to discrepancies on the Drawings or in order to obtain satisfactory construction.

D. Stones or rock fragments larger than 100mm in their greatest dimensions will not be permitted in the top 150mm of the finished sub-grade of all fills or embankments.

E. In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the Drawings, or as directed by the Engineer.

3.5 DISPOSAL OF UNSUITABLE/SURPLUS MATERIALS AND ROCKS

A. Unsuitable excavated materials shall be removed from the immediate site of work and disposed of by the Contractor on the Owner's land as directed by the Engineer.

B. Suitable excavated material may be used for fill or backfill, if it meets the specifications for common fill. Excavated material so approved may be neatly stockpiled at the site where designated by the Engineer provided there is an area available that will not inconvenience traffic or adjoining property owners. If space limitations do not permit stockpiling on the site, the Contractor will be required to make arrangements for off-site stockpiling. Transport of such material from and to the immediate site, including any stockpiling agreements, shall be entirely at the Contractor's expense and shall not constitute grounds for additional payment.

C. Surplus excavated material shall be used to fill depressions or other purposes as the Engineer may direct.

D. The Contractor shall remove and dispose of all pieces of rock which are not suitable for use in other parts of the Work. Rock disposed of by hauling away to spoil areas is to be replaced by approved surplus excavation obtained

elsewhere on the Work, insofar as it is available. Any deficiency in the backfill material shall be made up with acceptable material approved by the Engineer.

E. Fragments of ledge and boulders smaller than 25kgs.weight may be used in backfilling trenches and other deep fills. If, in the opinion of the Engineer, the quantity is excessive, he may order the removal and disposal of some of this rock. The small pieces of rock used as backfill shall not be placed in trenches until the pipe has at least 0.7 meters of earth over it. The Contractor shall place these pieces of stone in thin layers, alternating them with earth to be sure that all voids between the stones are completely filled with earth to prevent the occurrence of voids and settlement which will result there from.

F. Rock may be used for fill only with the approval of the Engineer.

3.6 COMPACTION/FIELD DENSITY TESTS

Field density tests shall be performed in accordance with the test procedure specified in ASTM D1556.

The location and frequency of field tests shall be at the discretion of the Engineer. Necessary tests shall be performed by the Engineer for acceptance of a compacted layer before attempting to place new fill material. Any layer or portion thereof that does not meet minimum compaction requirements shall be reworked and re-compacted until it meets the specified density requirements as determined by the Engineer.

**** END OF SECTION ****

SECTION 03200
CONCRETE REINFORCEMENT

15.4. PART 1 – GENERAL

1.1 SCOPE OF WORK

The WORK includes fabrication and installation of all steel bars and steel tie wire, clips, supports, chairs, and spacers required for the reinforcement of concrete as shown on the Drawings.

1.2 RELATED SECTIONS

Not Used

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicated, the current editions of the following Standards apply to the WORK of this Section:

ASTM A82	Steel Wire, Plain, for Concrete Reinforcement
ASTM A615/A615M ASTM A706/A706M	Deformed and Plain Billet – Steel Bars for Concrete Reinforcement
PNS 49	Philippine National Standard – Steel Bars for Concrete Reinforcement

1.4 SUBMITTALS

A. Detailed working drawings and bending schedules of all reinforcement.

B. Samples and test certificates as required by the applicable Reference Standards.

1.5 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard. The Contractor shall, at his own expense, replace all rejected materials for failure to comply with this Specification.

PART 2 – PRODUCTS

2.1 MATERIALS

Reinforcement steel shall be deformed, new billet steel bars conforming to ASTM A615, Grade 60 and 40, substantially free from mill scale, rust dirt, grease or other foreign matter.

Chemical Composition: The percentages of carbon, manganese, phosphorus, sulfur and silicon on finished bars shall conform to the specified values in PNS 49 as shown in Table 2.

Rail –steel bars will not be permitted in the Work.

Table 2 – Chemical Requirements

Element	Chemical Composition, Per Cent Maximum	
	Hot-Rolled Non-Weldable Deformed Steel Bar	Hot-Rolled Weldable Deformed or Plain Steel Bar
Carbon	-	0.38
Manganese	-	1.26
Phosphorus	0.0625	0.058
Sulfur	0.0625	0.058
Silicon	-	-

Reinforcement steel shall bear a mill identification symbol, shall be tagged with the size and mark number so that different types may be identified, and shall be stored off the ground to protect the steel from moisture and dirt until placed in final position.

Steel wire for tying reinforcing bars and waterstops shall conform to ASTM A82.

The following reinforcing steel bar sizes shall be used for all reinforced concrete design under this Contract.

Bar Designation	Approximate Cross-Sectional Area (mm^2)	Approximate Unit Weight (kg/m)
#10	78	0.616
#12	113	0.888
#16	201	1.579
#20	314	2.466

#25	492	3.854
#28	615	4.833
#32	804	6.313
#36	1018	7.991

Should the Contractor wish to use reinforcing steel bars having areas different from those shown (with consequent different designations), the following requirements shall apply:

- If the proposed substitute bar has an area from 97% to 105% of the designated bar, a direct substitution may be made without changes to bar spacing.
- If the proposed substitute bar has an area less than 97% of the designated bar, substitution may be allowed provided bar spacing is reduced to not more than the minimum clear distance between bars.
- If the proposed substitute bar has an area more than 105% of the designated bar, changes in spacing is limited to a maximum spacing of 300mm. All proposed changes shall be submitted to the Engineer for approval.
- Changes shall be implemented upon approval by the Engineer of the reinforcing arrangement Drawings, required as shop drawings, which shall be finalized upon issuance by the Engineer of the guidelines on related criteria, as maximum and minimum spacing and bond strength.
- Approval by the Engineer of bar size substitutions does not relieve the Contractor of other specified requirements, including steel grade and bar deformations.

15.5. PART 3 - EXECUTION

3.1 FABRICATION OF REINFORCEMENT

Reinforcement steel shall be accurately fabricated to the dimensions shown on the shop drawings and bar schedules.

All reinforcing bars shall be bent cold around a pin with a free revolving collar having a diameter of the bar of not less than the following:

- Four times for stirrups
- Six times for bars up to and including 25mm diameter
- Eight times for bars over 25mm diameter
- Ten times for bars 43mm and 57mm diameter

Reinforcement steel shall not be straightened nor rebent. Bars with kinks or bends not shown on the Drawings will not be accepted.

3.2 INSTALLATION OF REINFORCEMENT

All reinforcing bars shall be accurately placed as shown on the Drawings, and in accordance with the shop drawings and bar schedules. The reinforcing bars shall be secured against displacement with annealed iron wire ties of minimum GA#16 GI Wire (i.e. 1.39mm diameter) or suitable clips at the intersections.

Except as otherwise indicated on the Drawings reinforcement steel shall be installed with a clearance for concrete cover as follows:

▪ Concrete placed directly on earth	75 mm
▪ Formed surfaces in contact with the soil, water or exposed to the weather	75 mm
▪ Concrete cover of main reinforcement steel for columns and beams	40 mm
▪ Walls not in contact with the soil, water or exposed to the weather ▪ Top of slabs exposed to weather for Ø16 and smaller	40 m
▪ Underside of slabs over water surface, but not in contact with the water ▪ Top of slabs exposed to weather for Ø20mm and above	50 mm
▪ All other slab surfaces	20 mm

No reinforcing bars shall be welded.

All reinforcing bars in slabs shall be supported on concrete cubes or chairs of the correct height, containing soft steel wires embedded therein for fastening to the reinforcement steel. Such spacers or chairs shall have a minimum compressive strength of 24 MPa.

Reinforcing bars for vertical surfaces in beams, columns and walls shall be properly and firmly positioned from the forms by means of stainless steel (tipped) bolsters or other equal methods approved by the Engineer.

Reinforcement steel projecting from structures that are to be concreted or where concrete has already been poured shall not be bent out of its correct position.

**** END OF SECTION ****

SECTION 03300
CONCRETE

15.6. PART 1 – GENERAL

1.1 SCOPE OF WORK

The WORK includes furnishing all labor, materials, equipment and incidentals necessary for the construction of all concrete work.

1.2 RELATED SECTIONS

Other Sections of the Specifications shall also apply to the extent required for proper performance of this Work.

Section 33009	Concrete Reinforcement
Section 33010	Concrete Finishes
Section 33011	Construction Joints

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicated, the current editions of the following Standards apply to the WORK of this Section:

ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Concrete Aggregates
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C42	Obtaining and Testing Drilled Cores and Sawed Beams
ASTM C94	Ready-mixed Concrete
ASTM C143	Slump of Hydraulic-Cement Concrete
ASTM C150	Portland Cement
ASTM C347	Recommended Practice for Concrete Formwork, US Corps of Engineers CRD C-572
ASTM C494	Chemical Admixtures for Concrete
ASTM C805	Rebound Number of Hardened Concrete

1.4 SUBMITTALS

A. Samples as required by the applicable Reference Standards and in accordance with Part 3 – EXECUTION of this Specification.

1.5 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard. The Contractor shall, at his own expense, replace all rejected materials for failure to comply with this Specification.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Cement: Cement shall be Portland Cement conforming to ASTM C150, Type II, as follows:

Table 1- Physical Requirements of Cement

Test	Requirement
Compressive Strength for ages indicated, min.	
3 days	12.0 MPa
7 days	19.0 MPa
Time Setting by Vicat Method	
Initial Set, minimum	45 minutes
Final Set, maximum	375 minutes
Fineness, by turbidimeter test, minimum	160 m²/kg

B. Aggregates

1. Fine Aggregate: Fine aggregate shall be washed inert natural sand conforming to ASTM C33, and shall range in size from coarse to fine within the following limits of US Standard sieve sizes:

Table 2- Grading Requirements for Fine Aggregates

Sieve Designation	Per Cent (%) Passing
9.5 mm (3/8)	100

4.75 mm (No. 4)	95-100
2.36 mm (No. 8)	80-100
1.18 mm (No. 16)	50-85
0.60 mm (No. 30)	25-60
0.300 mm (No. 50)	5-30
0.150 mm (No. 100)	0-10
0.075 mm (No. 200)	0-3

2. Coarse Aggregate: Coarse aggregate shall be well graded crushed stone or washed gravel conforming to ASTM C33, size No. 67 as follows:

Table 3 – Grading Requirements for Coarse Aggregates

Sieve Designation	Weight Per Cent Passing
25 mm (1")	100
19.0 mm (3/4)	90-100
9.5 mm (3/8)	20-55
4.75 mm (No. 4)	0-10
2.36 mm (No. 8)	0-5
0.075 mm (No. 200)	0-1

3. Water: Water used in mixing, curing or other designated application shall be reasonably clean and free of oil, salt, acid, alkali, grass or other substances injurious to the finished product.

4. Admixtures

- Admixtures conforming to ASTM C494 may be used upon approval of the Engineer in writing, to control the time setting, to effect water reduction and to increase workability. Proportioning and mixing shall be as recommended by

  the manufacturer.

- The admixture may be a hydroxylated carboxylic acid type or a hydroxylated polymer type, but shall contain no calcium chloride. The use of an admixture shall not change the required quantities of cement specified under Table 4 of

  this Section.

- The total air entrained measured at the discharge from the truck shall be 3.0 per cent maximum for finished slabs and 3.5 to 5.0 per cent for all other concrete.

2.2 QUALITY OF CONCRETE

A. Before placing any concrete, the Contractor shall discuss with the Engineer the source of materials and concrete he proposes to use. Samples of aggregate and cement shall be furnished to the Engineer for testing.

B. The Contractor shall submit to the Engineer, his proposed design mix for evaluation.

C. Compressive strength, water-cement ratio and cement factor specified in Table 4 shall apply for regular and pumped concrete:

Table 4 – Concrete Quality Requirements

Test	Requirements	
	Concrete Fill	All Structural Concrete
Minimum Compressive Strength at 28 days (Mpa)	17.0	21.0 – 42.0
Maximum Net Water Content (liters/100kg cement)	62.0	53.0
Minimum Cement Content (kg/m^3)	260	330
Total Air Content (%)	3.5 – 5.0	3.5 – 5.0
Concrete Temp., Max. (°C)	32	32

D. Consistency of the concrete as measured in accordance with ASTM C143 shall be as shown in Table 5.

No excessively wet concrete will be permitted. Concrete delivered to the site having a slump more than that specified herein will be rejected.

Table 5 – Concrete Consistency

Type of Structure	Slump (mm)	
	Recommended	Range

Pavement and Slabs on Ground	50	25-75
Plain footings, gravity walls, slabs and beams	50-75	25-100
Heavy reinforced foundation walls and footings	75-100	50-125
Thin reinforced walls and columns	100	75-125

2.3 FORMS

A. Forms shall be made of either steel or new lumber approved by the Engineer and shall be free from roughness and imperfections, substantially watertight, adequately braced and tied to prevent movement and displacement when concrete is placed and vibrated. No wooden spreaders will be allowed in the concrete. Forms shall be thoroughly cleaned before using and shall be treated with approved non-staining oil or other approved material and allowed to dry before placement of the reinforcing steel.

B. Form ties in concrete exposed to view shall be the cone-washer type. Throughbolts or common wire shall not be used for form ties.

C. Molding or bevels shall be built into the forms to produce a 20-mm chamfer on all exposed projecting corners.

D. Forms for walls shall have removable panels at the bottom for cleaning, inspection and scrubbing-in of bonding paste.

15.7. PART 3 - EXECUTION

3.1 MIXING CONCRETE

A. Ready-mixed or transit-mixed concrete shall conform to ASTM C94. The concrete supplier shall furnish to the Engineer for his approval, the dry proportions to be used, with evidence that these will produce concrete of the quality specified.

B. Ready-mixed or transit-mixed concrete shall be transported to the site in watertight agitator or mixer trucks. Discharge at the site shall be within one (1) hour after the cement was first introduced into the mix. Retempering (i.e. mixing with or without additional cement, aggregate or water) of the concrete which has partially hardened, will not be permitted.

3.2 PLACING OF CONCRETE

A. All debris, dirt and water shall be removed from the forms. Forms, reinforcement steel, pipes, conduits, sleeves, anchors and other embedded items

shall be inspected and approved by the Engineer before placing any concrete. The Contractor shall advise the Engineer of his readiness to proceed at least 12 hours before each placement of concrete.

B. The surfaces of previously placed concrete, such as vertical or horizontal construction joints, shall be roughened, cleaned of foreign matter and laitance, and saturated with water.

Immediately before the new concrete is placed, all hardened surfaces shall receive a thorough coating of neat cement grout at least 5 mm thick which shall be well scrubbed in by means of stiff bristle brushes. The new concrete then shall be placed before the grout sets up.

Concrete shall be uniformly placed during the process of depositing until the completion of the layer to maintain an approximately horizontal plastic surface. The rate of placing concrete in forms shall not exceed 0.60 meter of vertical rise

per hour. The spreading of mounds of concrete with vibrator or by shoveling will not be permitted.

C. Concrete shall not be placed in water or stay submerged within 24 hours after placing, except for curing nor shall running water be permitted to flow over concrete surfaces within four days after the placing of concrete.

D. Chutes for conveying concrete shall be of U-shaped metal and provided with a baffle plate at the end. Chutes shall be placed at an angle of not less than 25 degrees, nor more than 45 degrees from horizontal and shall be kept clean and free from hardened concrete. Maximum length of chute to be traveled by plastic concrete shall not be more than 1.50 meters.

E. In thin walls or columns of considerable height, the concrete shall be placed in such a manner as to prevent segregation and accumulation of hardened concrete on the forms or the reinforcement steel located above the concrete mass. Free fall of concrete shall not be permitted to exceed 1.50 meters below the ends of hoppers, chutes, ducts, tremies, or "windows" in wall forms, without approval of the Engineer.

F. Where waterstop type construction joints are provided, the concrete shall be properly worked by rodding and vibrating around the waterstops to produce watertight joints, before any concrete is poured on the upper surfaces, particularly in the case of horizontal waterstops in slabs.

Waterstops shall be accurately positioned and securely held in place, and shall be protected at all times to prevent damage or displacement. Any damage to, or displacement of waterstops shall be corrected by the Contractor to the satisfaction of the Engineer.

3.3 TAMPING AND VIBRATING

A. During and immediately after placing the concrete, compaction shall be carried out by experienced operators using high-speed internal mechanical vibrators. Care shall be taken to ensure that vibration is continued long enough to produce optimum consolidation without segregation of the aggregates or migration of air.

B. At least one vibrator shall be used for every eight cubic meters of concrete placed per hour. One spare vibrator in operating condition shall be available on the site.

C. Vibrators shall be supplemented with proper wooden spade, puddling adjacent to forms and rodding around embedded fixtures, to remove trapped air bubbles and to prevent honeycombing.

3.4 CURING AND PROTECTION

A. All concrete work shall be properly cured. Details of the Contractor's curing procedures and curing compounds intended to be used shall be subject to the approval of the Engineer.

B. All exposed surfaces including finished surfaces shall be treated immediately after concrete has been poured, to provide continuous moist curing for at least 7 days. Walls and vertical surfaces may be covered with continuously saturated burlap or kept moist by other approved means. Horizontal surfaces, slabs, etc. shall be

ponded to a depth of 15mm or kept continuously wet by means of sprinklers or other approved methods.

C. Formed surfaces shall be thoroughly soaked with water at least twice each day until the forms are removed. Curing shall continue as specified above.

D. Where finishing of concrete surfaces is performed before the end of the curing period, the concrete shall not be permitted to dry out and shall be kept continuously damp by means of a fog of water from the time the concrete has been placed until the end of the curing period.

E. The Contractor shall protect all concrete work against injury from the elements and defacements of any nature during construction operations.

3.5 REMOVAL OF FORMS

A. The Contractor shall not remove any forms for at least 48 hours or until the concrete has attained a strength of at least 30 per cent of the ultimate 28-day strength. This is equivalent to approximately 50-day-degrees of moist curing. Day degree represents the total number of days times the average daily air temperature in °C at the surface of the concrete, e.g. 2 days at an average temperature of 25°C equals 50 day-degrees.

B. Forms for beams and slabs shall not be stripped for at least 150-day degrees and supports shall not be removed until the concrete has attained at least 60% of the specified 28-day strength and is capable of safely supporting its own weight. Construction live loads shall not be placed upon it until the concrete has attained its specified 28-day strength.

C. Removal of forms shall be in accordance with ACI – 347. Forms shall be stripped such that they will not damage the concrete. No forms shall be removed until the concrete has gained sufficient strength to support itself. The Contractor is responsible for the safety of all structures.

3.6 REPAIR OF DEFECTIVE CONCRETE

A. Defective or honeycombed areas, as determined by the Engineer, shall be chipped down to at least 25mm deep into sound concrete by means of chisels or chipping hammers. If honeycombs exist around reinforcement steel a clear space, at least 10mm wide shall be chipped all around the steel.

B. For areas less than 40mm deep, the patch may be made as in filling form-tie holes.

C. Thicker repairs will require build-up in successive 40mm deep layers on successive days, and each layer shall be applied with neat cement pastes.

D. For very deep patches, a non-shrink aggregate, with or without the addition of pea gravel, may be the used subject to the approval of the Engineer.

E. The materials shall be mixed as recommended by the manufacturer of the non-shrink aggregate or as directed by the Engineer.

Where a metallic non-shrink aggregate is utilized, the final 15mm of the patch shall be composed of 1 to 1-1/2 cement / sand mortar without the non-shrink aggregate to prevent rust staining of the surface. After hardening, the patch shall be rubbed as for filling form-tie voids, in accordance with Section 33010, Rubbed Finish.

F. All exposed concrete surfaces and adjoining work stained by spilling or leakage of concrete shall be cleaned to the satisfaction of the Engineer.

3.7 INSPECTION

Installation of reinforcing steel, pipes, sleeves, anchors and other embedded items, batching, mixing, transportation, placing, curing and finishing of concrete shall at all times be subject to the inspection of the Engineer. No concrete shall be placed without the prior approval of the Engineer.

3.8 FIELD CONTROL

A. Sets of six (6) cylinder specimens shall be taken at random by the Contractor in

the presence of the Engineer in accordance with ASTM C31. One (1) set per 50 cubic meters of concrete, or fraction thereof, poured during the day shall be made for the compressive strength test. At least one set of samples for strength test shall be made for each class of concrete.

B. Two (2) cylinders shall be tested after 7 days and two cylinders after 28 days. Should the average strength of the 28-day test specimens be less than the specified value, a verification test shall be conducted on the remaining two (2) cylinder samples, after 28 to 45 days. Compressive tests shall be in accordance with ASTM C39 and shall be performed by a laboratory engaged by the Owner. Testing fees shall be paid by the Contractor.

C. The Contractor shall assist, cooperate and provide the concrete for the test cylinders and such auxiliary personnel and equipment needed to take the test specimens.

D. Ready-mixed concrete shall be sampled and tested in accordance with the following methods.

Table 9 – Sampling and Test Methods for Ready-Mixed Concrete

Sampling/Test Method	Applicable ASTM Standard
Compressive Test Specimens	C31
Compression Tests	C39
Yield, Unit Weight	C138
Air Content	C138/C173/C231
Slump	C143
Sampling Fresh Concrete	C172
Temperature	C1064

3.9 FIELD TESTING

A. Should the average strength of the verification test specimens be less than the specified value, the Engineer may take further core samples from the portion of the structure which was determined by the Engineer to represent the deficient 28-day/verification test specimens.

B. If the strength of any core samples is less than the minimum requirements shown in Table 4, the Contractor shall strengthen or replace the portions of the structure concerned at no additional cost and to the satisfaction of the Engineer.

C. The Contractor shall also deduct from payments otherwise due to him, the actual cost to the Owner for taking all core samples extracted from that portion of the Work.

D. Slump tests, temperature and entrained air measurements shall be made when specimens for strength tests are taken and during placement of concrete, as often as necessary for control checks. If measured slump or air content falls outside the specified limits, a check test shall be made immediately on another portion of the same composite sample. In the event of a second failure, the concrete shall be considered to have failed the requirements of the specification and the whole batch shall be rejected.

3.10 BASIS OF ACCEPTANCE / REJECTION

Final acceptance of all concrete will be based on satisfactory results of compressive strength tests.

Strength tests representing each class of concrete must meet the following two requirements:

- The average of any three consecutive strength tests shall be equal to, or greater than the specified strength.

- No individual strength strength test shall be more than 15% below the specified strength.

Except as provided below, acceptance criteria will be as outlined in ASTM C94 and ACI 318. Concrete which achieves the required compressive strength will be accepted as satisfactory for payment provided placement, finish and tolerance meet the specified requirements.

Concrete with average strength deficient by not more than fifteen per cent (15%) of the required strength may be accepted, subject to cost reduction given in the following schedule:

Per Cent (%) Deficiency In Average Strength	Per Cent (%) of Unit Price Reduction
Less than 3	0
0 to less than 5	15
5 to less than 10	30
10 to 15	40
more than 15	100

Concrete represented by test results wherein the average strength indicated a deficiency of not more than fifteen percent (15%) but with an individual test

deficient by more than fifteen percent (15%) will not be eligible for payment but may be accepted or ordered replaced at the discretion of the Engineer.

Concrete represented by compressive strength tests that fail to achieve the required strength as specified, shall be liable to rejection and subsequent removal and replacement.

However, if any strength tests falls below the specified value by more than 15%, or an individual test is deficient by more than 15%, and load carrying capacity has been significantly reduced, tests of cores drilled from the area in question may be required in accordance with ASTM C42, wherein L/D ratio is not less than 1.25 prior to capping. In such cases, three (3) cores shall be taken for each strength test more than 15% below the required value.

If concrete in the structure will be dry under service conditions, cores shall be air dried for 7 days before test and shall be tested dry. If concrete in the structure will be more than superficially wet under service conditions, cores shall be immersed in water for at least 40 hours and be tested wet.

Concrete in an area represented by core tests shall be considered structurally adequate if the average of three (3) cores is equal to at least 85% of the specified strength, and if no single core is less than 75% of the minimum requirement. Additional testing of cores extracted from locations represented by erratic core strength results shall be permitted.

Acceptance and subsequent payment of concrete in question shall be based on the results of such tests, provided the complete operation has been supervised by the Engineer.

Rebound hammer test (ASTM C805) may be carried out by the Contractor prior to drilling core samples from structure in question, but the results of such rebound tests shall not be used as basis for acceptance or rejection of the concrete.

**** END OF SECTION ****

SECTION 03730

CONCRETE REPAIR USING EPOXY RESIN CONCRETE GROUTS AND MORTARS

15.8. PART 1 – GENERAL

1.1 APPLICABLE PUBLICATIONS

The publications listed below form part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 Military Specification

MIL-L-51149 Liquid Polymer, Polysulfide

1.1.2 American Society for Testing of Materials (ASTM)

Publications C 33-81 Concrete Aggregates

C 117-80 Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing

C 136-81 Sieve Analysis of Fine and Coarse Aggregates

C 144-81 Aggregate for Masonry Works

C 881-78 Epoxy-Resin-Base Bonding System for Concrete

D 1652-73 Epoxy Content of Epoxy Resins (R1980)

D 1824-66 Apparent Viscosity of Plastisols and Organosols at Low Shear Rates by Brookfield Viscometer

D 1963-74 Specific Gravity of Drying Oils, Varnishes Resins, and Related Materials at 25/25 Degrees C.

D 2419-74 Sand Equivalent Value of Soils and Fine Aggregates (R1982)

E 70-77 PH of Aqueous Solutions with the Glass Electrode

1.2 SUBMITTALS

1.2.1 Certified Test Reports

a. Aggregates: Sieve analysis test in accordance with ASTM C136 and ASTM C117.

b. Epoxy Resin Binder: Conforming to ASTM C881 and covering the following:
   1. Viscosity
   2. Consistency
   3. Gel Time
   4. Absorption
   5. Shrinkage
   6. Thermal Compatibility

c. Epoxy Resin Binder: Conforming to the two component epoxy resin binder type 1 specified hereinafter and covering the following.
   1. Epoxy Number
   2. Epoxy Viscosity
   3. Epoxy Specific Gravity
   4. Polysulfide Viscosity
   5. Polysulfide Specific Gravity
   6. Polysulfide pH
   7. Polysulfide Water Content
   8. Polysulfide Sulfur Content

1.2.2 Job Mix Formula: Submit for approval at least 15 days before work commences a job-mix formula for each use of epoxy resin. Test reports shall accompany the mix design. The formula shall identify the proposed source of the materials and state the proportions of aggregates and epoxy resin. Samples of materials to be used on the job shall be used to determine the job mix.

1.2.3 Samples: Submit the following samples for approval:

a. Not less than two sample epoxy concrete and epoxy mortar specimens for each mix design, 6-inches, ¾ inch thick.
b. Aggregates, 1-lb sample size, fine and coarse aggregates combined.
c. Epoxy resin components, 1 pint each

1.2.4 Equipment: Submit descriptive information on the mixing and application equipment.

1.3 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the Owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the Owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard.

15.9. PART 2 – PRODUCTS

2.1 MATERIALS

2.1.1 Epoxy Concrete and Epoxy Mortar:

2.1.1.1 Epoxy Resin Binder

2.1.1.1.1 ASTM C 881, Type III, Grade 2, Class C, with a bond strength of 1,400 psi.

2.1.1.1.2 A two-component epoxy resin-base binder of the epoxy resin-polysulfide polymer type with a suitable curing agent. The ratio of epoxy resin to polysulfide polymer shall be approximately 2:1 (by weight). The epoxy binder shall be a 100 percent solids system and no diluents, wetting agents, or volatile solvents shall be incorporated. The epoxy resin binder shall be Type I and shall conform to the following requirements:

2.1.1.1.2.

2 Base Polymer: The base polymer shall be thermosetting resin of the epoxy type and shall be a translucent liquid having properties as specified herein. The epoxy resin shall be completed of 100 percent reactive constituents, which are condensation products of the reaction of epichlorohydrin with bisphenol A. This product shall be essentially pure liquid dislycidly either of bisphenol A and maybe allowed to contain only trace amounts of hydrolyzable chlorine, but no reactive diluents. The epoxy resin or base polymer shall conform to the requirements specified in the Table I.

Table I. Requirements for the Epoxy Resin or Base Polymer

Property	Test Method	Requirements	
		Min.	Max.
Epoxy Number	ASTM D 1652	175	210
Viscosity, Poises at 23 C	ASTM D 1824	100	180
Specific Gravity at 25/25 C	ASTM D 1963	1.15	1.18

2.1.1.1.2.

2 Polysulfide Polymer. The polysulfide polymer flexibilizer shall be a dichloroethylformal polysulfide in the 1000- molecular weight range conforming to the requirements specified in Table II.

Table II. Requirements for Polysulfide Polymer

Property	Test Method	Requirements	
		Min.	Max.
Viscosity at 23C centipoises	ASTM D 1824	700	1200
Specific Gravity at 25/25 C	ASTM D 1963	1.24	1.30
pH	ASTM E 70	6.0	8.0
Water content, percent	MIL-L-51149	-	0.1
Sulfur content, percent	ASTM D 129	36	40

2.1.1.1.2.

2 Curing Agent: The curing agent shall be furnished combined with the polysulfide polymer flexibilizer as the polysulfide-curing agent component. The curing agent used shall be a tertiary amine type. When incorporated in the binder system, the curing agent shall be unaffected by moisture present on the surfaces to which the epoxy resin binder is applied or that moisture present in unhardened Portland cement concrete at the time of placement on the surface of the binder. These agents shall be a combination of 2-, 4-, 6- trimethylaminomethyl phenol and dimethylaminomethyl phenol. The 2-, 4-, 6- trimethylaminomethyl phenol may be used alone when application condition warrant.

2.1.2.2 Aggregate: Aggregate shall conform to the quality requirements of ASTM C 33 for epoxy concrete and shall have a minimum sand equivalent of 75 percent when tested in accordance with ASTM D 2419. ASTM C 144 for epoxy mortar. The material passing the No. 200 sieve shall be non-plastic and it shall be composed of a minimum of 75 percent limestone dust, talc or silica inert filler.

2.1.2.2.1 For Epoxy Concrete: Maximum size 3/8-inch. Shall conform to the following requirements:

Sieve Designation	Percent Passing by Weight

3/8 in	100
No.4	70-80
No.8	50-65
No. 16	37-53
No. 30	20-37
No. 50	10-20
No. 100	5-10
No. 200	3-5

2.1.2.2.2 For Epoxy Mortar: Maximum size: No 8 sieve

2.1.2 Pressure Grouting Epoxy:

2.1.2.1 For Pumping Into Cracks: ASTM 881, Type I, Grade I, Class C.

2.1.3 Bond Breakers : Use the type and consistency recommended by the sealant manufacturer for the particular application.

2.2 EQUIPMENT: The equipment for blending the epoxy resin binder and mixing the binder and aggregates shall be approve by the Engineers. A suitable capacity metal or polyethylene container recommended by the epoxy manufacturer shall be used as the mixing vessel for blending the epoxy resin. Mixing shall be accomplished using a poser drive (air or spark-proof) propeller type blade except that hand mixing maybe used for small batches. Equipment for field mixing of aggregates and epoxy resin shall be as specified by the epoxy manufacturer.

15.10. PART 3 – EXECUTION

3.1 CONSTRUCTION PROCEDURES

3.1.1 General: Mix the epoxy materials with or without files in strict accordance with the manufacturer's instruction. All application of the mixed materials shall be performed within the working life or pot life of the epoxy resin system. Unused mixed materials which have reached the end of the working or pot life, shall be removed from the jobsite. Field mixing and size of batch shall determine by the Contractor. Epoxy concrete, epoxy mortar, non-pressure epoxy grout, and pressure grouting of cracks shall be provided as indicated and required by this specification.

3.1.2 Epoxy Concrete:

3.1.2.1 Preparation of Patch Area: Remove loose concrete from the spalled areas indicated. Inspect the cavity of any remaining defective concrete by tapping with a hammer or steel rod throughout the areas and listening for dull or hollow sounds. In areas where tapping does not produce a solid tone, remove additional concrete until resting produces a solid tone. Use a high frequency chipping hammer or concrete saw

to deepened cavity. Make maw cuts a minimum of ½ inch deep at a minimum distance of one inch outside the farthest edge of the spall. Roughen saw cuts surface by sand blasting. Remove residual fines from all surfaces with a high pressure water jet. Remove any free water with an oil free air jet.

3.1.2.2 Spalls at Joint: Spalls to be repaired that are adjacent to all joints and working cracks shall have performed joint filler of proper dimensions inserted to the bottom of the chipped spall cavities and shall be expanded a minimum of one inch beyond (horizontally) the entire working faces of the spall. The filler strip shall be secured in place prior to and during placement of epoxy concrete. A bituminous cement bond breaker shall be applied to all working faces at keyed joints. Care shall be exercised to keep bituminous cement bond breaker off of concrete surface to be bonded. After the epoxy concrete has completely cured, the top inch of the preformed joint filler shall be sawed out and liquid joint sealer installed.

3.1.2.3 Mixing materials: Make batches small enough to assure placement before binder sets.

3.1.2.4 Prime coat: prime all surfaces of the cavity with the epoxy resin binder. Scrub prime coat into the surface with the stiff bristle brush. Make coating approximately 20 mils thick.

3.1.2.5 Epoxy Concrete Preparation: Mix epoxy resin binder and aggregates in accordance with manufacturer's recommendations.

3.1.2.6 Placement of Epoxy Concrete: Place epoxy in layers not exceeding

2 inches thick. Use vibratory floats, plates, or hand tampers to consolidate the concrete. Level each layer and screed the final surface to match the adjoining surfaces. Remove excess epoxy concrete on adjacent surfaces before concrete hardens. After the finishing operations and while the epoxy resin concrete is still tacky, uniformly spread a thin coating of Portland cement on the surface of the repaired area and lightly brush the cement into the surface. Upon completion of finishing operations, cure epoxy concrete in accordance with the manufacturer's recommendations.

3.1.3 Epoxy Mortar for cracks and saw Kerfs:

3.1.3.1 Preparation of Area: Concrete to which epoxy mortar is to be applied shall be newly exposed concrete free of loose and unsound materials: Prepare surfaces by sandblasting, scarifying or water blasting. Surfaces shall be dry before application of epoxy mortar.

3.1.3.2 Mixing Materials: Make batches small enough to assure placement before binder sets.

3.1.3.3 Prime Coat: Prime all surfaces with the epoxy resin binder. Scrub prime coat into the surface with a stiff bristle brush. Make coating approximately 20 mils thick.

3.1.3.4 Epoxy Mortar preparation: Mix epoxy resin binder and aggregates in accordance with manufacturer's recommendations.

3.1.3.5 Placement of Epoxy mortar: Apply epoxy mortar to concrete surface by trowel, roller or squeegee at a thickness not less than, nor more than, that recommended by the manufacturer. Work mortar into place and consolidate thoroughly so that all contact surfaces are wet by the feather edge epoxy mortar into adjacent surfaces.

3.1.4 Non-Pressure epoxy Grout: Prepare grout accordance with the manufacturer's instructions.

3.1.4.1 Cement Dowels: Immediately prior to placing dowel clean the hole of dust and other deleterious materials. Fill the hole with grout to a level that leaves enough space for the dowel without overflowing. Insert the dowel in the hole and tap down. If necessary add more grout.

3.1.4.2 Grout Cracks

3.1.4.2.1 Preparation of Area: Concrete to which epoxy grout in to be applied shall be newly exposed concrete free of loose and unsound materials. Prepare surfaces by sandblasting, scarifying or water blasting. Surfaces shall be dry before application of epoxy grout.

3.1.4.2.2 Apply epoxy grout to concrete surface by trowel, roller or squeegee at a thickness not more than 2-inches or as recommended by the manufacturer. Work grout into place and consolidate thoroughly so that all contact surfaces are wet by the grout. Finish surface of grout to the required texture. Do not feather edge epoxy grout into adjacent surfaces.

3.1.5 Pressure Grouting of Cracks: Fill cracks in concrete slabs, beams an by pumping a low viscosity epoxy resin system under pressure into the cracks. Install valves into position along the cracks by bonding in concrete with high viscosity, non-sagging epoxy resin paste mixture. Cracks shall be filled by pumping the low viscosity epoxy system through the valves.

3.1.5.1 Rout out cracks along its entire length to a depth of ¼ inch and a width of 3/8 inch. Vacuum or jet-blow off all dust and particles an the area of the groove.

3.1.5.2 At maximum intervals equivalent to the thickness of the member being repaired or 12 inches and at the juncture of two cracks the bottom of the groove shall be sawed flat and a valve inserted at each interval.

3.1.5.3 The groove between valves shall be filled flush with the concrete surface with the high viscosity epoxy mixture.

3.1.5.4 After the resin mixture has hardened and curved, a tube from a pressure pot containing the low viscosity resin mixture shall be attached t the first valve and the resin mixture pumped into the crack. Use a maximum pressure of 60 psi or less to protect the existing concrete.

3.1.5.5 As the resin mixture appears in the second valve, pinch closed the first valve, and attached the tube from the pressure pot to the second valve and commence pumping. Avoid delays in the pumping operations.

3.1.5.6 After the epoxy mixture has been pumped through all of the valves and the mixture has hardened, removed the valves by grinding off the valves flush with the concrete. Coat the areas of the valves with the high viscosity resin mixture and allow to curve.

3.2 FIELD TESTING AND INSPECTION:

3.2.1 Sampling: As soon as the epoxy resin and aggregate materials are available for sampling, obtain by random selection a sample of each batch in the presence of the Engineer. A batch is defined as that quantity of material processed by the manufacturer at one time and identified by designated name, specification number, batch number, project contact number, intended use and quantity involved.

3.2.2 Testing: At the discretion of the Engineer, samples provided maybe tested for verification.

3.2.3 Inspection: Examine material at the jobsite to determine that it is material referenced in the report o test result or certificate of compliance.

3.2.3.1 Surface preparations and application procedures will be examined by the Engineer to determine conformance with the requirements

specified. Approve each separate operation prior to initiation of subsequent operations.

**** END OF SECTION ****

SECTION 04200
MASONRY

15.11. PART 1 – GENERAL

1.1 SCOPE OF WORK

The Work includes furnishing all labor, materials, equipment and incidentals required to construct all concrete masonry unit walls including the following:

- Concrete hollow block walls.
- Masonry reinforcing bars for concrete blocks.
- Grouting.
- Connecting wall anchors, ties, bolts and related embedded items.
- Installation of frames for doors, windows, louvers, steel lintels, and recessed fixtures.

1.2 RELATED SECTIONS

Other Sections of the Specifications shall also apply to the extent required for proper performance of this Work.

Section 33030	Cement Plastering
Section 33019	Caulking and Damp proofing
Sections 33020 to 33028	Doors, Windows and Glass

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicated, the current editions of the following Standards apply to the WORK of this Section:

ASTM C33	Concrete Aggregates
ASTM C90	Loadbearing Concrete Masonry Units
ASTM C144	Aggregate for Masonry Mortar
ASTM C150	Portland Cement

1.4 SUBMITTALS

A. Detailed working drawings.

B. Samples as required by the applicable Reference Standards.

1.5 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard. The Contractor shall, at his own expense, replace all rejected materials for failure to comply with this Specification.

1.6 PROTECTION OF MATERIALS

All perishable materials for the Work of this Section shall be delivered, stored and handled to preclude damage of any nature. Manufactured materials, such as cement, shall be delivered and stored in their original containers, plainly marked with identification of material and maker. Materials in broken containers, or in packages showing watermarks or other evidence of damage, shall not be used and shall be removed from the site.

15.12. PART 2 – PRODUCTS

2.1 MATERIALS

A. Cement

Portland cement shall conform to ASTM C150, Type I. Masonry cements shall not be used. One color of cement shall be used throughout the Work.
Cement shall be used for the application intended and in accordance with the approved recommendation of the manufacturer.

B. Sand for Mortar

Sand shall be clean, durable particles, free from injurious amounts of organic matter and shall conform to the requirements of ASTM C144, Aggregate for Masonry Mortar.

Sand for grout shall conform to ASTM C144 or C33 as required.

C. Water

Water shall be free from injurious amounts of oils, acids, alkalis, organic matter, and shall be clean and fresh.

D. Concrete Hollow Blocks

1. Classification

Concrete block shall conform to ASTM C90, Type I, Normal Weight.

2. Manufacturing Requirements

Concrete hollow blocks shall be manufactured from Portland cement conforming to ASTM C150.

Aggregates for concrete blocks shall consist of sand and evenly graded pea gravel conforming to ASTM C33.

All concrete hollow blocks shall be even textured with straight and true edges, wet steam cured for at least 18 hours and then air cured in covered storage for not less than 28 days before delivery to the job site and shall conform to the requirements of Table 1.

Table 1 – Quality Requirements

Compressive Strength (Minimum, MPa)		Water Absorption (Maximum, kg/m³)	Moisture Content (Maximum, % of Total Absorption)
Average of Five (3) Samples	Individual Sample	Average of Five (3) Samples	Average of Five (3) Samples
7.1	6.9	208	40

The moisture content of hollow blocks when laid shall not exceed 35 per cent.

3. Dimensions

The actual dimensions of the concrete hollow blocks shall be as shown in Table 2.

Table 2 - Dimensions

Nominal Dimension (mm)			*Actual Dimension (mm)		
Width	Height	Length	Width	Height	Length

100	200	400	92	194	397
150	200	400	143	194	397
200	200	400	194	194	397

No average dimension shall differ from the specified actual dimensions by more than 3 mm.

4. Minimum Face Shell and Web Thickness

The following dimensions shown in Table 3 shall apply for minimum face and web thickness.

Table 3 - Minimum Thickness of Face Shells and Webs

Nominal Width mm (in.)	Face Shell Thickness (Minimum, mm)	Web Thickness (Minimum, mm)
102 (4")	19	19
152 (6")	25	25
203 (8")	32	25

2.2 MORTAR MIXES

Masonry mortar for setting blocks shall be in the proportion of 1 part cement to 3 parts sand or as otherwise approved by the Engineer. Mortar shall be mixed with water in an amount compatible with workability. Ingredients shall be accurately measured by volume.

Mixing shall be done immediately before usage. The Contractor shall use the dry-mix method, wherein the materials for each batch shall be well turned together until the cementitious materials has been thoroughly distributed throughout the mass, after which the water shall be gradually added until a thoroughly mixed mortar of the required plasticity is obtained.

Mortar boxes shall be cleaned out at the end of each day's work and all tools shall be kept clean. Mortar that has begun to set shall not be used.

The mixing of mortar by hand will be permitted only when the quality of hand mixing is comparable to mechanical mixing. The Engineer reserves the right to reject hand mixing and require all mixing by mechanical means. Mortar shall not be retained for more than 1-1/2 hours and shall be constantly mixed until used.

Pointing mortar shall be prehydrated mortar mixed dry, and water added while mixing to obtain a damp, or workable mix. After one or two hours, sufficient water shall be added to bring it to proper consistency, which shall be somewhat drier than masonry mortar.

The color of mortars shall be uniform throughout for adjoining areas, and shall be satisfactory to the Engineer.

15.13. PART 3 - EXECUTION

3.1 INSTALLATION

A. General

All masonry shall be laid plumb and true to lines. Masonry shall be carried up in a uniform manner. No portion shall be raised more than one meter above adjacent portions, except with the approval of the Engineer.

B. Concrete Hollow Block

- Concrete blocks shall be laid in running bond, unless otherwise indicated. Joints shall not exceed 10 mm, shall be uniform throughout, and finished slightly concave and smooth.

  Pointing shall be performed with the proper tools to a dense and neat finish. Finger pointing will not be allowed.

  All blocks shall be laid in a full bed of mortar applied to shells. Apply mortar to the vertical joint of blocks that have already set in the wall, and to all contact faces of the unit. Each unit shall be placed and shoved against the previously laid block to produce a well-compacted vertical mortar joint for the full shell thickness.

  Intersecting bearing walls shall be tied together with metal ties at 0.80-meter vertical spacing. Bends of tie and reinforcing bars shall be embedded in cells filled with mortar.

  Concrete blocks shall be reinforced with gage 10mm diameter at 0.60 meter on centers in vertical and horizontal direction.

- All necessary block cutting shall be neatly done by a masonry saw or cutting shall be done by hammering at any times with an approved hand tool.

- Unless otherwise shown on the Drawings, door, window and louver frames shall be installed using screws and expansion shields. All frames shall be set tightly against the masonry wall.

- Control joints shall be installed as detailed on the Drawings. The joints shall be raked out to a depth of 20 mm for the full height of the wall and caulked. The maximum length between joints shall be 10 meters, if not shown on the Drawings, or as directed by the Engineer.

  Joints made at the intersection of block walls with structural concrete, and where indicated, shall be filled with mortar grout and pointed.

C. Concrete Hollow Block to be Plastered

Concrete block walls, which are to be plastered, shall be laid in running bond. Joints are to be left rough to assist in the bonding of plaster. Otherwise, concrete block masonry shall conform to paragraph B, Concrete Hollow Block. Control joints in plastered block walls shall be carried through the plaster, but the joints shall not be plastered.

3.2 LINTELS, TIES AND MICELLANEOUS ITEMS

The Contractor shall build in all miscellaneous items specified in other sections to be set in masonry including frames, lintels, reinforcing steel, electrical boxes and fixtures, sleeves, grilles, anchors and other miscellaneous items. All anchorage, attachments, and bonding devices shall be set so as to prevent slippage and shall be completely covered with mortar.

3.3 GROUTING

Grout and cement mortar for setting railings, frames in walls and where otherwise required shall be done with mortar of 1 part cement to 1 part sand. Before placing grout, thoroughly clean all surfaces. Grout shall be tamped into place with a blunt tool to fill the entire void. In the event space does not permit tamping, the Contractor shall build the necessary forms and place the grout by pouring from one side only. When grout is placed by pouring, a head of grout shall be maintained in the form. Grout shall be kept wet for three days after the temporary supports or adjusting wedges are removed; the empty space shall be filled with grout and shall be pointed.

3.4 CLEANING

All exposed masonry work shall be thoroughly cleaned. Mortar smears and droppings on concrete block walls shall be dry before removal with a trowel. Masonry work may be cleaned using a mild muriatic acid solution.

**** END OF SECTION ****

SECTION 05101A
STRUCTURAL STEEL RETROFITTING

PART 1 – GENERAL

1.1 SCOPE OF WORK

The Work includes providing all labor, materials, equipment and incidentals necessary to furnish and install all additional structural steel items including cover plates and side plates required for the retrofitting of the structural elements as shown on the Drawings.

1.2 RELATED SECTIONS

Other sections of the Specifications shall also apply to the extent required for proper performance of this Work.

Not applicable

1.3 SPECIFICATIONS AND STANDARDS

Except as otherwise indicated, the current editions of the following Standards apply to the WORK of this Section:

ASTM A36	Carbon Structural Steel
ASTM A325	Structural Bolts, Steel, Heat Treated, 120/105 Ksi Minimum Tensile Strength
ISO 261	ISO General Purpose Metric Screw Threads - General Plan
AWS A5.1	Mild Steel Covered Arc-Welding Electrodes
AWS D1.4	Structural Welding Code – Reinforcing Steel

1.4 SUBMITTALS

A. Detailed shop drawings of all structural steel elements to be retrofitted.

1.5 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard. The Contractor shall, at his own expense, replace all rejected materials for failure to comply with this Specification.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Structural shapes, plates and bars unless otherwise noted shall conform to the requirements of ASTM A36.

B. Welding rods shall conform to AWS A5.1. All welding rods shall be E70XX grade.

C. High strength steel bolts shall conform to ASTM A325.

D. Hexagonal Nuts

E. Standard Washers

PART 3 - EXECUTION

3.1 WELD SURFACE PREPARATION

Prior to commencement of welding works, the Contractor shall thoroughly prepare and clean the structural steel surfaces of all dirt, grease, rust or other foreign matter.

3.2 COVER PLATE INSTALLATION

A. Temporary support in the form of shoring shall be installed prior to execution of retrofitting works, where applicable.

B. Materials for welding shall be the best available as recommended by the manufacturer of the materials to be welded, and in accordance with AWS Standard.

C. Welding of parts shall be in accordance with the Structural Welding Code D1.1 of the AWS and shall only be done by welders certified as to their ability to

perform welding in accordance with the locally accepted requirements.

D. Weld sizes shall be as per the issued structural drawings.

E. Welding inspection shall be done as per AWS Standard.

3.3 PAINTING

A. After installation, the Contractor shall thoroughly prepare and clean the structural steel surfaces of all dirt, grease, rust or other foreign matter.

B. Paint shall be applied by qualified painters. Paint color is to match the existing.

**** END OF SECTION ****

SECTION 33015 A
RETROFITTING (USING CARBON FIBER)

15.14. PART 1 – GENERAL

1.1 SCOPE OF WORK

The WORK includes furnishing all labor, materials, equipment and incidentals necessary for the completion of the steel piles corrosion protection system.

1.2 RELATED SECTIONS

Not Used

1.3 SUBMITTALS

A. Samples / test reports / certificates as required.

B. Detailed working drawings.

1.4 QUALITY ASSURANCE

The Contractor is responsible for the performance of all tests and inspection required by this Standard Specification. However, the owner reserves the right to perform any or all prescribed tests and inspection where such is deemed necessary to ensure that delivered materials conform to the specifications, and shall be paid for by the Contractor. The Contractor shall furnish the owner certified copies of records showing that each material has been pre-tested, and complied with all applicable requirements of this Standard. The Contractor shall, at his own expense, replace all rejected materials for failure to comply with this Specification.

15.15. PART 2 – PRODUCTS

2.1 MATERIALS

A. Composite Strengthening System

1. Carbon fabric or the approved equivalent.

   A material which is used where additional strength, modulus or environmental durability is required and is compatible with all commonly used epoxy resin systems.

Table 1 – Carbon Fiber Properties or approved equivalent

Dry Fiber Density (g/cc)	1.82

Dry Fiber Thickness (mm)	0.167
Dry Fiber Tensile strength (N/mm^2)	4 000
Tensile modulus (N/mm^2)	230 000
Dry Fiber Elongation at Break (%)	1.70
Laminate Nominal Thickness (mm)	0.167
Laminate Nominal Cross Section (mm^2 per m width)	167
Laminate Tensile Strength (N/mm^2)	3 200
Laminate Modulus of Elasticity in Tension (kN/mm^2)	210
Laminate Elongation at Break in Tension (%)	1.59

2. Epoxy Resin or approved equivalent

Table 2 – Primer

Density (kg/l), Component A+B mixed at +23°C	1.30 ± 0.1
Viscosity (mPas)	
+ 10°C	~10 000
+ 23°C	~6 000
+ 35°C	~5 000
Modulus of Elasticity in Flexure, 7 days at +23°C (N/mm^2)	~3800
Tensile Strength, 7 days at +23°C (N/mm^2)	~30
Modulus of Elasticity in Tension, 7 days at +23°C (N/mm^2)	~4 500
Elongation at Break, 7 days at +23°C (%)	0.9
Tensile Adhesion Strength, Concrete fracture (N/mm^2) On Sandblasted substrate	>4
Coefficient of Thermal Expansion (°C) Temperature range - 10°C - +40°C	4.5×10^{-5}
Glass Transition Temperature, 30 days curing time (°C)	
+ 30°C	+58
Heat Deflection Temperature (°C)	
+ 10°C, 7 days curing time	+36

+ 23°C, 7 days curing time	+47
+ 35°C, 7 days curing time	+53
Service Temperature (°C)	- 40 to 45

Table 3 – Main Impregnating Resin

Density (kg/l), Component A+B mixed at +23°C	1.16
Viscosity (mPas)	
+ 15°C	~2 000
+ 23°C	~700
+ 40°C	~200
Modulus of Elasticity in Flexure, 7 days at +23°C (N/ mm^2)	~2 800
Tensile Strength, 7 days at +23°C (N/ mm^2)	~45
Modulus of Elasticity in Tension, 7 days at +23°C (N/ mm^2)	~3 500
Elongation at Break, 7 days at +23°C (%)	1.5
Tensile Adhesion Strength, Concrete fracture (N/mm^2) On Sandblasted substrate	>4
Coefficient of Thermal Expansion (°C) Temperature range - 20°C - +40°C	6.0 x 10^{-5}
Glass Transition Temperature (°C)	
+ 30°C, 30 days curing time	+53
Heat Deflection Temperature (°C)	
+ 15°C, 7 days curing time	+43
+ 23°C, 7 days curing time	+49
+ 40°C, 3 days curing time	+60
+ 40°C, 7 days curing time	+66
Service Temperature (°C)	- 40 to 45

15.16. PART 3 - EXECUTION

3.1 SAFETY

A. Safety policy issued shall be posted at a noticeable place in the site.

B. All personal protective equipment required for safe completion of the job shall be worn properly.

3.2 PRE – PROJECT PREPARATION

A. Obtain all equipment and materials as per checklist and any special project requirements.

3.3 SURFACE PREPARATION

A. Surfaces where the Composite Strengthening System is to be applied must be sound.

B. Rust scales, oil or grease, old paint coating, and other contaminants must be removed by any applicable method approved by the Engineer.

C. Inject cracks. Cracks greater than 0.25mm (0.010 in.) must be stabilized using epoxy injection methods.

D. Honeycombs and bug holes shall be filled up.

E. Remove form lines, sharp edges and protrusions by grinding or filling with putty. Ridges greater than 5mm may need to be ground down as per engineer's inspection.

F. Sharp edges, fins, and protrusions that can cause voids between the wrap and the steel girder surface or those that are injurious to the fibers shall be removed by grinding or any approved method approved by the Engineer. Ridges greater than 5mm may need to be ground down as per engineer's inspection.

G. Smoothen any surface undulations greater than 15mm over 1m as per the inspection of the engineer.

H. Radius corners perpendicular to the fiber orientation by grinding as per the project specifications.

I. Ensure and open pore structure of the substrate by either sandblasting, high-pressure water blasting or wire brushing.

J. Surfaces must be cleaned of dust and debris by blowing with air or broom cleaning.

K. The substrate should be dry before the application of the Composite Strengthening System.

L. All other method of surface preparation equal to the above standard maybe permitted subject for approval by the Engineer.

3.4 PREPARATION WORK FOR PROJECT

A. Review project specifications in detail.

B. Pre-cut fabric with off-site labor where possible.

C. Check surface-prep of substrate to make sure all patchwork is complete and cured.

3.5 SET – UP OF SATURATOR AND AUTOMATIC MIXING UNIT

A. When using automatic mixing unit, setting up shall be supervised and meticulously checked by the properly trained foreman or supervisor.

B. When using saturator, setting up shall be supervised and meticulously checked by the properly trained foreman or supervisor as per the manufacturer's instructions. Gap to be measured and set for a ratio of 0.8:1.0 of epoxy to fabric by weight.

C. Equipment should be located in a well-ventilated and well lighted area.

3.6 EPOXY MIXING

A. Hand mix or use the automatic mixing unit to obtain proper mix ratio of 100 parts A to 40 parts B by volume OR 100 parts A to 33 parts B by weight from Epoxy Resin component container. The batch ratio tolerance is 5%.

NOTE: Batching down from the pre-packaged units is not recommended.

B. Mix thoroughly as per instructions, for 5 minutes on low using a paddle-style mixer until uniformly blended.

3.7 SATURATION

A. Hand Saturation.

1. Cover a smooth flat level surface with polyethylene sheeting, i.e., VISQUEEN™ or 0.5mm (20 mil) plastic film, approximately the length and width of the average size of the Carbon Fabric sheet to be applied.
2. Prime the surface of the plastic sheeting by pouring a bead of the mixed Epoxy down the center, then spreading it out the epoxy with a spatula.
3. Lay the pre-cut Carbon Fabric sheet down onto the epoxy- covered plastic sheet and then pour another bead of Resin Epoxy directly on top.
4. "Saturate" the Carbon Fabric sheet by applying smooth, even pressure with a spatula or roller to the fabric surface. The surface of the carbon fabric will have sheen to it and yet still appear to have some texture.
5. A good way to check proper saturation is to periodically check the resin/fabric usage ratios. All of the epoxy that is recommended for a given square meters (footage) of fabric should be used up.
6. Carefully roll-up the saturated Carbon Fabric onto a take-up roller (PVC tube) and use immediately.

3.8 APPLICATION

A. Beginning with a clean work area (free of dust and debris), place VISQUEEN™ or paper a minimum of four (4) feet around or under the element where the strengthening system is to be applied.

B. Using a roller, prime the area to be wrapped by applying Resin Epoxy. Wait approximately 1 hour to allow the epoxy to penetrate the substrate pores and to become "tacky".

C. Apply the saturated Carbon Fabric to the element to be strengthened as indicated on the drawings.

D. For maximum adhesion of vertical or overhead applications, apply the layers of Carbon Fabric individually, waiting approximately 1 hour in between layers. Columns may be continuously wrapped.

E. Apply Carbon Fabric with uniform and smooth pressure either with a stiff spatula or a surface roller removing and air bubbles caught beneath the fabric surface. More resin may be added to the applied Carbon Fabric with a wetted roller if necessary.

F. For Columns:

- Wrap the column with the specified number of wraps as calculated and indicated on the specification. Wrap TOP first; BOTTOM second or as per project specifications. Sequence to be advised on daily work sheet for each column. Follow the approved drawings.

- While continuously wrapping, apply Carbon Fabric with uniform and smooth pressure either with a stiff spatula or a surface roller, securing and smoothing each layer.

G. For Beams (including shear strengthening):

- Wrap the beam with the specified number of wraps as calculated and indicated on the specification. Sequence to be advised on daily work sheet for each beam. Follow the approved drawings.

- Apply shear strengthening layers on top of the flexural strengthening layers or as per engineering drawings. This method helps to secure the ends of the flexural strengthening.

- Install Fiber Anchors as per specifications if required.

H. For Walls (including URM walls):

- Apply specified number of layers as calculated and indicated on the specification. Application sequence to be advised on daily work sheet. Follow the approved drawings.

- Install Fiber Anchors as per specifications if required.

I. For Slabs

- Apply specified number of layers as calculated and indicated on the specification. Application sequence to be advised on daily work sheet. Follow the approved drawings.

- Additional set time may be necessary to properly adhere large sheets of Carbon Fabric in overhead applications.

- Install Fiber Anchors as per specifications if required.

J. At Wall / Slab Connections:

- ☐ Install specified radius bedding of Epoxy Putty at joint of wall and slab, insuring that radius extends equally between the wall and slab as per drawings. Allow the Epoxy Putty to cure overnight to a tacky, firm state.

- ☐ Apply primer coat as per section "3.8."

- ☐ Apply Carbon Fabric with uniform and smooth pressure, either with a stiff spatula or a surface roller, onto the wall/slab and over the joint as per the drawings.

- ☐ Install Fiber Anchors as per specifications if required.

- ☐

3.9 FINISH

A. Cover the top and bottom of fiber or cut trim for aesthetics.

B. Paint as specified. Always wait until epoxy final coat is dry-tacky to touch. If over 72 hours, surface must be brush blasted.

3.10 CLEAN UP

A. Clean all equipment each day. Uncured epoxy should be wiped up with a rags wetted with MEK solvent or the equivalent.

B. If there is any uncured epoxy left at the end of the day, pour it out thinly on a flat polyethylene lined surface where it will cure safely overnight.

3.11 FIELD CONTROL

A. The Contractor shall assist, cooperate, and provide the necessary material samples and such auxiliary personnel and equipment needed to procure the test specimens.

B. The Contractor shall protect all retrofitting works against injury from the elements and defacements of any nature during construction operations.

3.12 INSPECTION

All finished works related to this section shall at all times be subject to the inspection and approval of the Engineer. Any defects found shall be repaired or restored by the contractor to the satisfaction of the Engineer.

3.13 FIELD TESTING

A. All samples selected shall undergo testing by an independent testing laboratory duly approved or recommended by the Engineer for verification.

B. Laboratory should precondition procured samples 48 hours at 60°C (140°F) before testing.

C. Laboratory must return results within ten days maximum.

Section VII. Drawings

(Please see attached)

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.

BILL OF QUANTITIES

PROJECT : **Supply of Labor and Materials for the Proposed Structural Retrofitting of The SEC Headquarters**
OWNER : **Securities and Exchange Commission**
LOCATION : **The SEC Headquarters, 7907 Makati Ave., Salcedo Village, Bel-Air, Makati City**

ITEM NO.	DESCRIPTION OF WORKS			QUANTITY		UNIT COST	ESTIMATED DIRECT COST
				Qty	Units		
A.	**GENERAL REQUIREMENTS**						
1.0	Mobilization and Demobilization			1.00	lot	P _____	P _____
2.0	Permits & Documentation Fees including Bonds and Insurances			1.00	lot	P _____	P _____
3.0	Temporary Facilities / Utilities			1.00	lot	P _____	P _____
4.0	Safety Occupational Hazards - Complete supply of Safety and Health, and Security Requirements for the Construction			1.00	lot	P _____	P _____
5.0	Occupational Safety and Health (PPE & Safety Requirements)			1.00	lot	P _____	P _____
6.0	Provision of Steel Scaffoldings			1.00	lot	P _____	P _____
7.0	Project Supervision			1.00	lot	P _____	P _____
8.0	Complete As- Built Drawings			1.00	lot	P _____	P _____
9.0	Equipment Cost During Construction / Lifting Fee			1.00	lot	P _____	P _____
10.0	Clearing, Cleaning and Hauling of Debris			1.00	lot	P _____	P _____
11.0	Handling of Materials			1.00	lot	P _____	P _____
					SUBTOTAL	P _____	P _____
B.	**RETROFITTING WORKS**						
1.0	**EXISTING CONDITION**						
	1.1	Demolition Works		1.00	lot	P _____	P _____
	1.2	Chipping Works on Existing Column		1.00	lot	P _____	P _____
					SUBTOTAL		P _____
2.0	**ENLARGEMENT OF EXISTING STRUCTURE**						
	2.1	Enlargement of Columns and Beams					
		2.1.1	Concrete Forms and Accessories	281.31	sqm	P _____	P _____
		2.1.2	Concrete Reinforcement	4,050.01	kgs	P _____	P _____
		2.1.3	Cast-in-Place Concrete, 4000 psi	17.78	cu.m	P _____	P _____
					SUBTOTAL		P _____
3.0	**FIBER REINFORCED POLYMER SYSTEM**						
	3.1	Removal of CHB partition walls		202.30	sqm	P _____	P _____

	3.2	Application of structural epoxy for cracks and uneven surface under abnormal condition/ Application of concrete repair by epoxy injection, if any		792.71	gals	P _____	P _____
	3.3	Surface preparation and related works:					
		3.3.1	Surface grinding	11,324.43	sqm	P _____	P _____
		3.3.2	Cleaning of surfaces from debris/dust including. anti-dust plastic cover for existing furniture	11,324.43	sqm	P _____	P _____
	3.4	Application of FRP system:					
		3.4.1	Structural Epoxy Adhesive	7,927.10	kgs	P _____	P _____
		3.4.2	Shearwall FRP Fiber 600c	891.11	sqm	P _____	P _____
		3.4.3	Beam Flexure FRP Fiber 600c	3,482.36	sqm	P _____	P _____
		3.4.4	Beam Shear FRP Fiber 600c	6,950.96	sqm	P _____	P _____
					SUBTOTAL		P _____
4.0	**EARTHWORKS**						
	4.1	Clearing and Grubbing		1.00	lot	P _____	P _____
	4.2	Structural Excavation		165.82	cu.m	P _____	P _____
	4.3	Backfill and Compaction		151.74	cu.m	P _____	P _____
	4.4	Soil Poisoning		27.55	sq.m	P _____	P _____
	4.5	Hauling and Disposal of unnecessary debris		14.08	cu.m	P _____	P _____
					SUBTOTAL		P _____
C.	**STRUCTURAL WORKS**						
1.0	**CONCRETE WORKS**						
	1.1	Slab 4000 psi					
		1.1.1	18th Floor Deck Slab	17.20	cu.m	P _____	P _____
		1.1.2	19th Floor Deck Slab	17.86	cu.m	P _____	P _____
	1.2	50mm thk concrete topping (Class B Mixture, 2500 psi) for the following:					
		1.2.1	18th Floor	5.73	cu.m	P _____	P _____
		1.2.2	19th Floor	8.48	cu.m	P _____	P _____
					SUBTOTAL		P _____
2.0	**REBAR WORKS**						
	2.1	Slab Reinforcement					
		2.1.1	12mmØ RSB Grade 40 @ 18th Floor including. G.I. tie wires	1,093.14	kgs.	P _____	P _____
		2.1.2	12mmØ RSB Grade 40 @ Roof Deck including G.I. Tie wires	1,638.35	kgs.	P _____	P _____
					SUBTOTAL		P _____
3.0	**FORM WORKS**						
	3.1	Slab Formworks					
		3.1.1	18th Floor Deck Slab	8.86	sq.m	P _____	P _____
		3.1.2	19th Floor Deck Slab	27.02	sq.m	P _____	P _____
					SUBTOTAL		P _____

4.0	**STRUCTURAL STEEL WORKS**						
	4.1	1.2mm thk Web type steel decking (class c, grade 80) including structural steel supports complete with bolts					
		4.1.1	18th Floor Deck Slab	114.66	sq.m	P _____	P _____
		4.1.2	19th Floor Deck Slab	169.65	sq.m	P _____	P _____
		4.1.3	W21x57	4,075.03	kgs.	P _____	P _____
		4.1.4	W12x19	180.12	kgs.	P _____	P _____
		4.1.5	W14x53	1,071.87	kgs.	P _____	P _____
		4.1.6	Lx90x90x6	112.33	kgs.	P _____	P _____
		4.1.7	Lx75x75x6	143.55	kgs.	P _____	P _____
		4.1.8	Anchor Bolts, Expansion Bolts including Injectable / epoxy mortar and Base Plates • 12mm Ø x 200mm Anchor Bolt • 25mm Ø A325 x 450mm Expansion Bolt • 20mm Ø A325 x 300mm Expansion Bolt • 16mm Ø A325 x 450mm Expansion Bolt • 25mm thk 200mm x 600mm Base Plate • 20mm thk 200mm x 400mm Base Plate • 22mm thk 300mm x 450mm Base Plate • Miscellaneous (Injectable/epoxy mortar etc.)	1.00	lot	P _____	P _____
					SUBTOTAL		P _____
D.	**ARCHITECTURAL WORKS**						
1.0	**RESTORATION WORKS**						
	1.1	Lifting & transferring of all furniture, utilities & equipment including Anti-dust Plastic Cover for all furniture • Anti-dust plastic cover 50 pcs per 1 pack 40" x 60" (200 packs)		1.00	lot	P _____	P _____
	1.2	Restoration of Existing Ceiling including framings, supports and accessories, and existing bronze/glass/mirror-cladded columns		12,000.00	sqm	P _____	P _____
	1.3	Restoration of Existing Floor tile finish including topping and grout		8,800.00	sqm	P _____	P _____
	1.4	Restoration of CHB partition and other affected areas/ finishes/ fixtures including plastering cover or topcoat finish for composite retrofitting materials		202.30	cu.m	P _____	P _____
	1.5	Application of cement plaster to finish on enlarged		204.08	sqm	P _____	P _____
	1.6	Painting of column surfaces (enlarged columns)		204.08	sqm	P _____	P _____

	1.7	Provision of Board-up Enclosure • 3/4" x 4' x 8' Ordinary Plywood (320 sheets • 2" x 4" x 12' Coco lumber (436 pcs) • Asstd. CWN (9.5kgs) • Painting Works (Flat wall Enamel) - 1 sided only	1.00	lot	P _____	P _____
		SUBTOTAL				P _____
E.	**SUMMARY**					
	GENERAL REQUIREMENTS					P _____
	RETROFITTING WORKS					P _____
	STRUCTURAL WORKS					P _____
	ARCHITECTURAL WORKS					P _____
		TOTAL DIRECT COST				P _____
APPLIED TO TOTAL DIRECT COST LESS ITEMS A.1- A.5			OCM	10%		P _____
APPLIED TO TOTAL DIRECT COST LESS ITEMS A.1- A.2			PROFIT	8%		P _____
OCM PLUS PROFIT			MARK UP	18%		P _____
APPLIED TO TOTAL DIRECT COST PLUS MARK UP			VAT	5%		P _____
			TOTAL INDIRECT COST			P _____
		TOTAL OVERALL COST				P _____

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);
Technical Documents		
☐	(b)	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;
☐	(c)	Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules;
☐	(d)	Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid;
☐	(e)	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;
	(f)	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; *Note: attach all documents stated under BDS Clause 10.4*
☐		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;
☐	(g)	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		
☐	(h)	The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).
Class "B" Documents		

☐	(i)	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		
☐	(j)	Original of duly signed and accomplished Financial Bid Form; **and**
Other documentary requirements under RA No. 9184		
☐	(k)	Original of duly signed Bid Prices in the Bill of Quantities; **and**
☐	(l)	Duly accomplished Detailed Estimates Form, including a summary shee indicating the unit prices of construction materials, labor rates, and equipmen rentals used in coming up with the Bid; **and**
☐	(m)	Cash Flow by Quarter.

SAMPLE FORMS

TABLE OF CONTENTS

BID FORM

Date : _____
Public Bidding no. 2023-041

To: Securities and Exchange Commission
SEC Headquarters
7907 Makati Avenue, Salcedo Village,
Belair, Makati City

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

PROJECT Description	**Approved Budget for the Contract,** inclusive of all applicable taxes and other charges	**Total Bid Price,** inclusive of all applicable taxes and other charges
Supply of Labor and Materials for the Proposed Structural Retrofitting of The SEC Headquarters	Php 149,456,471.00	Php _____
Amount in words: _____		

a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract]*;

b. We offer to execute the Works for this Contract in accordance with the PBDs;

c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;

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

e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,

f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;

g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines[1] for this purpose;

h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity*]*.

l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

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

Date: _____

Omnibus Sworn Statement (Revised)

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

AFFIDAVIT

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

   a) Carefully examine all of the Bidding Documents;

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

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

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

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

10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government**

of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

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

_____
Bidder's Representative/Authorized Signatory

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

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

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ *[date issued], [place issued]*
IBP No. _____ *[date issued], [place issued]*

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

BID SECURING DECLARATION FORM

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

x----------x

BID SECURING DECLARATION
Invitation to Bid: *[Insert Reference number]*

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

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.

2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA 9184; without prejudice to other legal action the government may undertake.

3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:

   (a) Upon expiration of the bid validity period, or any extension thereof pursuant to your request;

   (b) I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right;

   (c) I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

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

[Insert NAME OF BIDDER'S AUTHORIZED REPRESENTATIVE]
[Insert Signatory's Legal Capacity]
Affiant

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

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

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ *[date issued], [place issued]*
IBP No. _____ *[date issued], [place issued]*

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

Statement of all Ongoing Contracts including Awarded but not yet Started Government & Private Contracts, whether similar or not similar in nature and complexity to the contract to be bid

Name of Contract (Project Title and Name of Entity)	Date of contract	Contract duration	Owner's name and address	kind of Goods	Amount of contract	Value of outstanding works	Date of Delivery
							(Date of Delivery shall refer to the expected date the project shall be fully completed/delivered or paid)

Note:

1. ***Current/on-going extended contracts should be included in the list***
2. ***On-going extended contracts should be included in the list.***

Instructions:

a) If there is no ongoing contract including awarded but not yet started as of the aforementioned period, state none or equivalent term.
b) The total amount of the ongoing and awarded but not yet started contract should be consistent with those used in the Net Financing Contracting Capacity (NFCC) in case an NFCC is submitted as an eligibility documents

Submitted by:

Company Name: _____

Authorized Representative: _____
(Signature over printed name)

Designation: _____

Date: _____

Statement of Single Largest Completed Contract similar to the contract to be bid within the five (5) years period

This is to certify that the project named below is the Single Largest Completed Contract similar to the contract to be bid, within the five (5) years period

Name of Contract (Project Title and Name of Entity)	Date of contract	Contract duration	Owner's name and address	Kind of Goods	Amount of completed contracts, adjusted by the bidder to current prices using PSA's consumer price index, if necessary	Date of Delivery (*Date of Delivery shall refer to the date the project was fully delivered, completed or paid*)

Note: Bidder shall attach the following:

1. **Photocopy of approved Contract or Purchase Order/Work Order**
2. **End-user's Certificate of Completion or Acceptance from bidder's client or Official Receipt issued for the contract covering the full amount of the contract**

Submitted by:

Company Name: _____

Authorized Representative: _____
(Signature over printed name)

Designation: _____

Date: _____

AUTHORITY OF SIGNATORY
(For Corporation)

I, (Name of Corporate Secretary), of legal age, Filipino, with business address at _____, after being duly sworn to in accordance with law do hereby depose and state:

That I am the duly elected Corporate Secretary of (Name of Corporation), a corporation duly organized and existing under and by virtue of applicable Philippine laws:
That at the special meeting of the Board of Directors of the said corporation, duly called and held at the principal office on (Date of Meeting) at which a quorum was presented and voting throughout the following resolution was unanimously approved to wit:

"RESOLVED, any of the following whose specimen signature/initials and copy of acceptable government issued identification cards with signatures as attachment, is/are authorized to sign in behalf of the Corporation, to submit documents and represent solely for the purpose of complying with the (Name of Project).

NAME	ID WITH SIGNATURE PRESENTED	SPECIMEN SIGNATURE	SPECIMEN INITIALS

IN WITNESS WHEREOF, I have hereunto affix my signature this ____ day of _____ at _____.

PRINTED NAME/SIGNATURE
CORPORATE SECRETARY

SUBSCRIBED AND SWORN TO before me in the City of _____ this _____ day of _____ by (Name of Corporate Secretary) who has satisfactorily proven to me his/her identity through his/her (Identification Card presented), that he/she is the same person who personally signed before me the foregoing Affiant and acknowledged that he/she executed the same.

NOTARY PUBLIC

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

AUTHORITY OF SIGNATORY
(For Sole Proprietor/Partnership)

I, (Name Owner/Managing Partner), of legal age, [civil status], Filipino, and residing at [address of affiant], after having been duly sworn in accordance with law do hereby depose and state that:

1. I am the Sole Proprietor/Managing Partner of [Name of Bidder], with office address at [Address of Bidder;

2. As the Sole Proprietor/Managing Partner of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to represent it in the bidding for [Name of the Project] of the [Name of the Procuring Entity];

3. As the Sole Proprietor/Managing Partner of [Name of Bidder], I authorized [Name of Representative] whose specimen signature/initials and copy of acceptable government issued identification cards with signatures as clearly shown attachment, is authorized to sign in behalf of the [Name of Bidder], to submit documents and represent solely for the purpose of complying with the bidding of [Name of Project]

NAME	ID WITH SIGNATURE PRESENTED	SPECIMEN SIGNATURE	SPECIMEN INITIALS

IN WITNESS WHEREOF, I have hereunto affix my signature this ____ day of _____ at _____.

PRINTED NAME/SIGNATURE

SUBSCRIBED AND SWORN TO before me in the City of _____ this _____ day of _____ by (Name of Corporate Secretary) who has satisfactorily proven to me his/her identity through his/her (Identification Card presented), that he/she is the same person who personally signed before me the foregoing Affiant and acknowledged that he/she executed the same.

NOTARY PUBLIC

Doc. No. _____
Page No. _____
Book No. _____

Contract Agreement Form for the Procurement of Infrastructure Projects (Revised)

[not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT AGREEMENT

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

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

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as part of this Agreement, *viz.*:
   - **a.** Philippine Bidding Documents (PBDs);
     - i. Drawings/Plans;
     - ii. Specifications;
     - iii. Bill of Quantities;
     - iv. General and Special Conditions of Contract;
     - v. Supplemental or Bid Bulletins, if any;
   - **b.** Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;

   Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (*e.g.*, Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;
   - **c.** Performance Security;
   - **d.** Notice of Award of Contract and the Bidder's conforme thereto; and
   - **e.** Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. **Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.**

3. In consideration for the sum of *[total contract price in words and figures]* or such other sums as may be ascertained, *[Named of the bidder]* agrees to *[state the object of the contract]* in accordance with his/her/its Bid.
4. The *[Name of the procuring entity]* agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

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

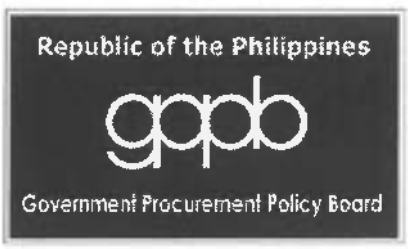
[Insert Name and Signature]
[Insert Signatory's Legal Capacity]

for:
[Insert Procuring Entity]

[Insert Name and Signature]
[Insert Signatory's Legal Capacity]
for:
[Insert Name of Supplier]

Acknowledgment

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


Republic of the Philippines
gppb
Government Procurement Policy Board