PHILIPPINE BIDDING DOCUMENTS

Government of the
Republic of the Philippines

Procurement of INFRASTRUCTURE PROJECTS

First Edition
May 2025

Preface

These Philippine Bidding Documents (PBD) for the procurement of Infrastructure Projects (hereinafter referred to also as the "Works") through *Competitive Bidding*[1] have been prepared by the Government of the Philippines (GoP) for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the Government, including government-owned and/or -controlled corporations (GOCC), government financial institutions (GFI), state universities and colleges (SUC), local government units (LGU), and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory[2] use in projects that are financed in whole or in part by the GoP or any foreign government/foreign or international financing institution in accordance with the provisions of the Implementing Rules and Regulations (IRR) of Republic Act No. 12009 (RA No. 12009).

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

The Bidding Documents shall clearly and adequately define, among others: (a) the objectives, scope, and expected outputs and/or results of the proposed contract; (b) the eligibility requirements of Bidders; (c) the expected contract duration; and (d) the obligations, duties, and/or functions of the winning bidder.

In order to simplify the preparation of the Bidding Documents for each procurement, the PBD groups the provisions that are intended to be used unchanged in Section II. Instructions to Bidders (ITB) and in Section IV. General Conditions of Contract (GCC). Data and provisions specific to each procurement and contract should be included in Section III. Bid Data Sheet (BDS); Section V. Special Conditions of Contract (SCC); Section VI. Specifications; Section VII. Drawings; and Section VIII. Bill of Quantities. The forms to be used are provided in Section IX. Philippine Bidding Documents Related Forms.

Prudence must be exercised to check the relevance of the provisions of the PBD against the requirements of the specific Works to be procured. In addition, 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, except for the notes introducing Section IX. Philippine Bidding Documents Related Forms, where the information is useful for the Bidder. 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 proposal submission," should be furnished in the BDS and SCC. 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, SCC, Specifications, Drawings, and Bill of Quantities are not part of

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[1] For Second Stage of Competitive Dialogue under Section 29.4.2 of IRR of RA No. 12009.

[2] Unless the Treaty or International or Executive Agreement expressly provides use of foreign government/foreign or international financing institution procurement guidelines.

the text of the final document, although they contain instructions that the Procuring Entity should strictly follow. The Bidding Documents should not contain footnotes except Section IX. Philippine Bidding Documents Related Forms since these provide important guidance to Bidders.

d) The cover page should be modified as required to identify the Bidding Documents and date of issue.

e) The Project title page should be modified as required to identify the Project title and number, name and address of the Procuring Entity.

f) If modifications must be made to the bidding requirements, they can be presented in the BDS. Modifications for specific Project or Contract details should be provided in the SCC as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the BDS or SCC, these terms shall be printed in bold type face on Section II. Instructions to Bidders, and Section IV. General Conditions of Contract, respectively. To facilitate easy reference and completion, clauses from the BDS and SCC shall appear in bold type face in Sections II and IV, respectively.

Republic of the Philippines
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MAGAT RIVER INTEGRATED IRRIGATION SYSTEM
HEAD OFFICE

Name of Procuring Entity: MAGAT RIVER INTEGRATED IRRIGATION SYSTEM - HEAD OFFICE
Address: Minante I, Cauayan City 3305 Isabela, Philippines

Procurement of INFRASTRUCTURE PROJECTS

EARLY PROCUREMENT ACTIVITY (EPA) FOR

REHABILITATION AND PROTECTION WORKS OF SCOURED EMBANKMENT ALONG MACAÑAO CHECKGATE STA. 0+310 - 0+608 (ONE SIDE ONLY) (TOTAL LENGTH = 298.00 M)
CONTRACT NO. EPA-2026-MARIIS-DIV-RNIS-03

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Glossary of Acronyms, Terms, and Abbreviations

ABC – Approved Budget for the Contract.

ADR – Alternative Dispute Resolution.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

COS – Contract of Service.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

GCC - General Conditions of Contract.

GFI – Government Financial Institution.

GOCC – Government-Owned and/or –Controlled Corporation.

GoP – Government of the Philippines.

GPPB – Government Procurement Policy Board.

HoPE – Head of Procuring Entity.

JO – Job Order.

IRR – Implementing Rules and Regulations.

ITB – Instructions to Bidders.

LCB- Lowest Calculated Bid.

LCRB – Lowest Calculated Responsive Bid.

LGUs – Local Government Units.

LoC – Line of Credit

MAB – Most Advantageous Bid.

MARB – Most Advantageous Responsive Bid.

MEARB – Most Economically Advantageous Responsive Bid.

MYCA – Multi-Year Contracting Authority.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

PSA – Philippine Statistics Authority.

RA No. – Republic Act Number.

SARB – Single Advantageous and Responsive Bid.

SCC - Special Conditions of Contract.

SCRB – Single Calculated and Responsive Bid.

SEARB – Single Economically Advantageous Responsive Bid.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

SRRB – Single Rated and Responsive Bid.

UN – United Nations.

Definition of Terms

Bid – a signed offer, proposal, or quotation submitted by a supplier, manufacturer, distributor, contractor, consultant, or service provider in response to the requirements of the Procuring Entity as stated in the Bidding Documents. (IRR of RA No. 12009, Section 5[c]).

Bidder – a supplier, manufacturer, distributor, contractor, consultant, and service provider, whether public or private, who submits a Bid in response to the requirements of the Procuring Entity as stated in the Bidding Documents. (IRR of RA No. 12009, Section 5[d]).

Bidding Documents – the documents issued by the Procuring Entity as the basis for Bids, furnishing all information necessary to prospective bidder to prepare a Bid for the Goods, Infrastructure Projects, and Consulting Services required by the Procuring Entity. (IRR of RA No. 12009, Section 5[e])

Bill of Quantities – a list of the specific items of the Work and their corresponding unit prices, lump sums, and/or provisional sums.

Consulting Services – services for Infrastructure Projects and other types of projects or activities of the government requiring adequate external technical and professional expertise that are beyond the capability or capacity of the government 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. (IRR of RA No. 12009, Section 5[i]).

Contract – the agreement entered into between the Procuring Entity and the Contractor to execute, complete, and maintain the Works and as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contract Price – the price stated in the Notice of Award and thereafter to be paid by the Procuring Entity to the Contractor for the execution of the Works in accordance with this Contract.

Contract Time Extension (CTE) – the allowable period for the Contractor to complete the Works in addition to the original Completion Date stated in this Contract.

Contractor – 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.

Days – refers to calendar days; months to calendar months.

Dayworks – varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.

Defect – any part of the Works not completed in accordance with the Contract.

Defects Liability Certificate – the certificate issued by the Procuring Entity upon correction of defects by the Contractor.

Defects Liability Period – the one (1) year period between contract completion and final acceptance within which the Contractor assumes the responsibility to undertake the repair of any damage to the Works at its own expense.

Drawings – graphical presentations of the Works. They include all supplementary details, shop drawings, calculations, and other information provided or approved for the execution of this Contract.

Effective Date of the Contract – the date indicated in the contract. However, the Contractor shall commence performance of its obligations only upon receipt of the Notice to Proceed.

Foreign-funded Procurement or Foreign-Assisted Project – refers to the acquisition of Goods, Consulting Services, and the contracting for Infrastructure Projects by the Government of the Philippines which are wholly or partly funded by foreign loans or grants pursuant to a Treaty or International or Executive Agreement.

Funding Source – Organization named in the SCC.

Goods – refer to (i) all items, supplies, and materials, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity; or (ii) general support services which pertain to all types of services except Consulting Services and Infrastructure Projects, such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services. Personnel Services or individual COS or JO engagements do not fall under this definition; (IRR of RA No. 12009, Section 5[n]).

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;” (IRR of RA No. 12009, Section 5[r]).

Lot – refers to one or more infrastructure projects that are grouped or bundled together based on factors, such as scope, location, or other relevant parameters, as determined by the End-User or Implementing Unit of the Procuring Entity. Each lot is distinct within the project and may be awarded as a separate contract.

MARB – refers to the award criteria in the procurement of Infrastructure where the considerations for the award of contract are the eligibility of the bidder, the responsiveness of its bid to the technical requirements, and the most advantageous bid in reference to the highest rated offer based on the quality component of the bid.

Materials – refer to all supplies, including consumables, used by the Contractor for incorporation in the Works.

MEARB – refers to the award criteria in the procurement of Infrastructure where the considerations for the award of contract are the eligibility of the bidder, the responsiveness of its bid to the technical requirements, and the determination of the most economically advantageous bid in reference to the quality-price ratio allocated to the technical and financial components of the bid.

Notice to Proceed – refers to a written notice issued by the Procuring Entity to the Contractor requiring the latter to begin the commencement of the work not later than a specified or determinable date.

Online submission – pertains to the submission of the bid for Infrastructure Projects and the bid envelopes containing the technical and financial components of the bid through electronic means or through the electronic bidding facility of the PhilGEPS, once available.

Permanent Works – refer to all permanent structures and all other project features and facilities required to be constructed and completed in accordance with this Contract which shall be delivered to the Procuring Entity, and which shall remain at the Site after the removal of all Temporary Works.

Plant – refers to the machinery, apparatus, and the like intended to form an integral part of the Permanent Works.

Procuring Entity - the organization acquiring the Infrastructure Project, as named in the SCC.

Project – refers to a specific or identified procurement covering Goods, Infrastructure Projects 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.

Program of Work – refers to the big-picture plan and comprehensive schedule that details construction-related tasks to ensure the timely and efficient delivery of the project.

Site Investigation Reports – refers to those that were included in the Bidding Documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.

Slippage – refers to a delay in work execution occurring when actual accomplishment falls below the target as measured by the difference between the scheduled and actual accomplishment of the Work by the Contractor as established from the work schedule. This is actually described as a percentage of the whole Works.

Simple Infrastructure Projects – refers to construction, improvement, rehabilitation, demolition, repair, restoration, or maintenance of structures, technical facilities and systems with an Approved Budget for the Contract (ABC) not exceeding Ten Million Pesos (PhP 10,000,000.00) built at the community level for the sustenance of lives and livelihoods of the population living in a community and built according to the needs and aspirations of the community population.

Verified Report – the report submitted by the Implementing Unit to the HoPE setting forth its findings as to the existence of grounds or causes for termination and explicitly stating its recommendation for the issuance of a Notice to Terminate.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The Invitation to Bid shall be:

a) In line with the principles of transparency and competitiveness and to ensure the widest possible dissemination thereof, all invitations to bid shall be published continuously by the Procuring Entity, for seven (7) calendar days on the Philippine Government Electronic Procurement System (PhilGEPS) website, in any conspicuous place reserved for this purpose in the premises of the Procuring Entity, and on the website or social media platforms of the Procuring Entity, if available, or such other channels as may be authorized by the Government Procurement Policy Board (GPPB), and the website prescribed by the foreign government/foreign or international financing institution, if applicable; and
b) For justifiable reasons, Procuring Entities that cannot publish procurement opportunities on its website, social media platform, or such other channels authorized by the GPPB shall publish its invitation to bid, at least once, in a newspaper of general nationwide circulation.

Apart from the essential items listed in the Bidding Documents, the Invitation to Bid should also indicate the following:

a) The availability of the Bidding Documents, which shall be commence from the time the Invitation to Bid is first published until the deadline for submission and continue until the deadline for 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;
d) The procurement strategy/ies; and
e) The bid award criterion/criteria. (*e.g.*, the application of a margin of preference in bid evaluation)

The Invitation to Bid should be incorporated into the Bidding Documents. The information contained in the Invitation to Bid must conform to the Bidding Documents, particularly to the relevant information in the BDS.

Republic of the Philippines
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MAGAT RIVER INTEGRATED IRRIGATION SYSTEM
HEAD OFFICE

BAGONG PILIPINAS

INVITATION TO BID FOR
EARLY PROCUREMENT ACTIVITY
CONTRACT NO. EPA-2026-MARIIS-DIV-RNIS-03
REHABILITATION AND PROTECTION WORKS OF SCOURED EMBANKMENT ALONG MACAÑAO CHECKGATE STA. 0+310 - 0+608 (ONE SIDE ONLY) (TOTAL LENGTH = 298.00 M)

1) The *National Irrigation Administration - Magat River Integrated Irrigation System Head Office*, through **the FY 2026 National Expenditure Program (NEP)** intends to apply the sum of **Fifty Eight Million Two Hundred Seventy Two Thousand Three Hundred Sixty Eight & 37/100 Pesos Only (PHP 58,272,368.37)** being the Approved Budget for the Contract (ABC) to payments under the contract for **the Early Procurement Activity (EPA) for the Contract No. EPA-2026-MARIIS-DIV-RNIS-03; Rehabilitation and protection works of scoured embankment along Macañao Checkgate sta. 0+310 - 0+608 (One Side Only) (Total Length = 298.00 m).** Bids received in excess of the ABC shall be automatically rejected at bid opening. The award of the contract is subject to the effectivity of the **General Appropriations Act (GAA) for FY 202**6.[3]

2) The *National Irrigation Administration - Magat River Integrated Irrigation System Head Office* now invites bids for **Rehabilitation and protection works of scoured embankment along Macañao Checkgate sta. 0+310 - 0+608 (One Side Only) (Total Length = 298.00 m)** located at Cabatuan, Isabela under Magat River Integrated Irrigation System - Division IV.[4] Completion of the Works is required within **Ninety (90) calendar days.** Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II. Instructions to Bidders (ITB).

3) Bidding will be conducted through competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the IRR , otherwise known as the "New Government Procurement Act (NGPA)".

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[3] Approved Budget for the Contract (ABC) refers to the budget for the contract duly approved by the Head of the Procuring Entity (HoPE), within the authorized amount in the General Appropriations Act (GAA), continuing, and automatic appropriations, or other authorized source of funds, in the case of National Government Agencies (NGAs); the corporate operating budget approved by the governing Boards, pursuant to Executive Order (EO) No. 518, s. 1979, entitled "Establishing a Procedure for the Preparation and Approval of the Operating Budgets of Government Owned or Controlled Corporations, in the case of GOCCs, GFIs, and RA No. 8292, or the "Higher Education Modernization Act of 1997", in the case of SUCs; and the budget for the contract approved by the Sanggunian through an appropriation ordinance in the case of LGUs. For multi-year contracts, for which a Multi-Year Contractual Authority (MYCA) or an equivalent document is required, the ABC shall be the total project cost reflected in the MYCA or equivalent document (Section 5(a), RA No. 12009).

[4] A brief description of the scope of Works should be provided, including quantities, location of project, and other information necessary to enable potential bidders to decide whether or not to respond to the invitation.

Bidding is restricted to Filipino citizens/sole proprietorships, cooperatives, and partnerships or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines.

4) Interested bidders may obtain further information from the *National Irrigation Administration - Magat River Integrated Irrigation System Head Office* and inspect the Bidding Documents at the address given below from *8:00 A.M. – 5:00 P.M. (Monday – Friday)*.

5) A complete set of Bidding Documents may be acquired by interested bidders from **27 December 2025 to 19 January 2026,** from the given address and website/s below and upon payment of the applicable fee for the Bidding Document, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Fifty Thousand Pesos Only (Php 50,000).**

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

6) The *National Irrigation Administration - Magat River Integrated Irrigation System Head Office* will hold a ***Pre-Bid Conference*** on **07 January 2026*, 2:30 P.M.***, at ***EOD Mini Conference Head Office, NIA-MARIIS, Minante I, Cauayan City*** and/or through video conferencing on the following the link: **https://meet.google.com/vsd-dnae-cwm** which shall be open to prospective bidders.

7) Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before **19 January 2026*, 8:45 A.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 **19 January 2026*,*** at ***2:30 P.M*** at ***EOD Mini Conference Head Office, NIA-MARIIS, Minante I, Cauayan City***. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

10) The *National Irrigation Administration - Magat River Integrated Irrigation System Head Office* 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 Section 70 of R.A. No. 12009, without thereby incurring any liability to the affected bidder or bidders.

11) For further information, please refer to
JEROME M. ELEGADO
Head, BAC Secretariat
NIA-MARIIS Head Office
Minante I, Cauayan City, Isabela 3305

Telephone No. (078) 307 0037
Email address: **mariis.bac@nia.gov.ph**

12. You may visit the following websites:
For downloading of Bidding Documents:
http://mariis.nia.gov.ph/

23 December 2025

ENGR. ROLDAN D. BERMUDEZ
BAC Chairperson

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

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

This Section contains provisions that shall not be changed or modified. Any amendment shall be reflected in Section III. Bid Data Sheet which consists of provisions that supplement, amend, or specify in detail information or requirements included in this Section and which are specific to each procurement.

Matters governing performance of the Contractor, payments under the contract, or those affecting the risks, rights, and obligations of the parties under the contract are not normally included in this Section, but rather under Section IV. General Conditions of Contract (GCC), and/or Section V. Special Conditions of Contract (SCC). If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, prudence must be exercised to avoid contradictions between clauses dealing with the same matter.

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A. General

1) Scope of Bid

1.1 The Procuring Entity named in the **BDS**, invites Bids for the **REHABILITATION AND PROTECTION WORKS OF SCOURED EMBANKMENT ALONG MACAÑAO CHECKGATE STA. 0+310 - 0+608 (ONE SIDE ONLY) (TOTAL LENGTH = 298.00 M)** with Project Identification Number **CONTRACT NO. EPA-2026-MARIIS-DIV-RNIS-03**.

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

1.2 The winning Bidder will be expected to complete the Works by the intended completion date specified in **SCC** Clause 1.1.

2) Source of Funds

The Procuring Entity has a budget or received funds from the Funding Source named in the **BDS**, and in the amount indicated in the **BDS**. It intends to apply part of the funds received for this Project to cover eligible payments under the contract.

3) Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

3.1 Unless otherwise specified in the **BDS**, the Procuring Entity, as well as Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. In pursuance of this policy, the Procuring Entity:

a) defines, for purposes of this provision, the following terms under existing laws, rules, and regulations:

i) "corrupt practice" means an act by which officials in the public or private sectors improperly and unlawfully enrich themselves, others, or induce others to do so, by misusing the position in which they are placed, and includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; entering, on behalf of the government, into any contract or transaction manifestly and grossly disadvantageous to the same, whether or not the public officer profited or will profit thereby, and similar acts as provided in RA No. 3019.

ii) "fraudulent practice" means a misrepresentation of facts for purposes of influencing a procurement process or the execution of a contract to the detriment of the Procuring Entity, which includes collusive practices among Bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the Procuring Entity of the benefits of free and open competition.

iii) "collusive practices" means a scheme or arrangement between two or more Bidders, with or without the knowledge of the Procuring Entity, designed to establish bid prices at artificial, non-competitive levels.

iv) "coercive practices" means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;

v) "obstructive practice" is

a) deliberately destroying, falsifying, altering or concealing of evidence material to an administrative proceedings or investigation or making false statements to investigators in order to materially impede an administrative proceedings or investigation of the Procuring Entity or any foreign government/foreign or international financing institution relative to allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent the latter from disclosing its knowledge of matters relevant to the administrative proceedings or from pursuing such proceedings or investigation; or

b) acts intended to materially impede the exercise of the inspection and audit rights of the Procuring Entity or any foreign government/foreign or international financing institution herein.

b) Undertakes to reject a proposal for award upon *prima facie* determination that the Bidder recommended for award has engaged in any of the prohibited practices mentioned in this Clause for purposes of competing for the contract.

3.2 Further, the Procuring Entity will seek to impose the maximum civil, administrative, and/or criminal penalties available under the applicable laws on individuals and organizations deemed to be involved in any of the practices mentioned in **ITB** Clause 4.

3.3 Furthermore, the Funding Source and the Procuring Entity reserve the right to inspect and audit records and accounts of a Bidder or Contractor in the bidding for and performance of a contract themselves or through independent auditors as reflected in the **GCC** Clause 36.

4) Conflict of Interest

4.1 All Bidders found to have conflicting interests shall be disqualified to participate in the procurement at hand, without prejudice to the imposition of appropriate administrative, civil, and criminal sanctions. A Bidder may be considered to have conflicting interests with another Bidder in any of the events described in paragraphs (a) through (c) and a general conflict of interest in any of the circumstances set out in paragraphs (d) through (f) below:

a) A Bidder has controlling shareholders or beneficial owners in common with another Bidder;

b) A Bidder receives or has received any direct or indirect subsidy from any other Bidder;

c) A bidder has the same legally authorized representative as that of another Bidder for purposes of this Bid;

d) A bidder has a relationship, directly or through third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder or influence the decisions of the Procuring Entity regarding this bidding process. This may include a firm or an organization that lends, or temporarily seconds, its personnel to firms or organizations that are engaged in consulting services for the preparation related to procurement for or implementation of the project if the personnel would be involved in any capacity on the same project;

e) A bidder who participated as a consultant in the preparation of the design or technical specifications of the goods and related services that are the subject of the bid; or

f) A bidder who lends, or temporarily seconds, its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for or implementation of the project, if the personnel would be involved in any capacity on the same project.

4.2 All Bidding Documents shall be accompanied by an Omnibus Sworn Statement of the Bidder that it is not related, by consanguinity or affinity up to the third civil degree, to the HoPE, Procurement Agent (if engaged), the head of the Project Management Office (PMO), the End-User or Implementing Unit or any members of the Bids and Awards Committee (BAC), Technical Working Group (TWG), and BAC Secretariat.[4]

4.3 The Bidder shall also disclose the ultimate beneficial ownership of the entity it represents. Failure to comply shall be a ground for the automatic disqualification of the bid in consonance with Section 59 of the IRR. For this reason, relationship to the aforementioned persons within the third civil degree of consanguinity or affinity shall automatically disqualify the Bidder from participating in the procurement of contracts of the Procuring Entity notwithstanding the act of such persons inhibiting themselves from the procurement process. This Clause shall apply to the following persons and affiliates:

a) In the case of individuals or sole proprietorships, to the Bidders and their spouses;

b) In the case of partnerships, to the partnership itself and its partners;

c) In the case of cooperatives, to the cooperative itself and members of the board of directors, general manager or chief executive officer;

d) In the case of a partnership, joint venture, or consortium, to the entity itself, its members or partners, as well as any person or entity that is a member of a blacklisted partnership, joint venture, or consortium; and

[4] Section 81.1 of the IRR.

e) In the case of corporations, a single stockholder, together with their relatives up to the third civil degree of consanguinity or affinity, and their assignees, holding at least twenty percent (20%) of the shares therein, its chairperson and president, shall be blacklisted after they have been determined to hold the same controlling interest in a previously blacklisted corporation or in two corporations that have been blacklisted; the corporations of which they are part shall also be blacklisted.

5) Eligible Bidders

5.1 Only Bids found to be legally, technically, and financially eligible will be evaluated. For procurement of Infrastructure Projects, the following persons shall be eligible to participate in this bidding:

a) Duly licensed Filipino citizens or sole proprietorships;

b) Partnerships duly organized under the laws of the Philippines and of which at least sixty percent (60%) of the interest belongs to citizens of the Philippines;

c) Corporations duly organized under the laws of the Philippines, and of which at least sixty percent (60%) of the outstanding capital stock belongs to citizens of the Philippines;

d) Cooperatives duly organized under the laws of the Philippines; and

e) Persons or entities forming themselves into a Joint Venture (JV), i.e., a group of two (2) or more persons or entities that intend to be jointly and severally responsible or liable for a particular contract; Provided, however, that in accordance with relevant laws, rules, and regulations, Filipino ownership or interest of the joint venture concerned shall be at least sixty percent (60%); Provided, further, that joint ventures in which Filipino ownership or interest is less than sixty percent (60%) may be eligible where the structures to be built require the application of techniques or technologies which are not adequately possessed by a person or entity meeting the sixty percent (60%) Filipino ownership requirement; Provided, furthermore, that in the latter case, Filipino ownership or interest shall not be less than twenty-five percent (25%). For this purpose, Filipino ownership or interest shall be based on the contributions of each of the member of the joint venture as specified in their Joint Venture Agreement (JVA); Provided, finally, that the primary purpose of each member of the joint venture must be similar or related to the requirement of the project to be bid out.

5.2 The Procuring Entity may also invite foreign bidders when provided for under any Treaty or International or Executive Agreement as specified in the **BDS**.

5.3 In accordance with RA No. 4566 or the “Contractors' License Law” as amended by RA No. 11711 or “An Act Further Amending Republic Act No. 4566”, the persons or entities enumerated in Section 52 of the IRR may participate in the procurement of Infrastructure Projects if it has been issued a license by the Philippine Contractors Accreditation Board (PCAB) to engage or act as a contractor.

5.4 The Bidder must have completed an SLCC that is similar to the procurement project to be bid, and whose value must be equivalent to at least fifty percent (50%) of the ABC, adjusted to current prices using the Philippine Statistics Authority (PSA) consumer price indices; Provided, that any change to the fifty percent (50%) requirement may be allowed, subject to the recommendation of the Procuring Entity, which shall be submitted to the GPPB for consideration; Provided, further, that contractors under Small A and Small B categories without similar experience on the procurement project to be bid may be allowed to bid if the cost of such contract is not more than the Allowable Range of Contract Cost of their registration based on the guidelines as prescribed by the PCAB.

For foreign-funded procurement, the GoP and the foreign government, or foreign or international financing institution may agree on another track record requirement, as specified in the **BDS**.

Moreover, a contract shall be considered similar to the procurement project if it has the same major categories of work. The Procuring Entity may clarify in the Bidding Documents what is regarded as major categories of work, guided by the principle of proportionality and Fit-for-Purpose approach.

5.5 The SLCC shall be supported by an Owner's Certificate of Final Acceptance issued by the project owner other than the Contractor, or a final rating of at least Satisfactory in the Constructors Performance Evaluation System (CPES), or a similar performance and monitoring system. In the case of contracts with the private sector, an equivalent document shall be submitted.

5.6 The computation of a bidder's NFCC must be at least equal to the ABC to be bid, calculated as follows:

> NFCC = [(Current assets minus current liabilities) (15)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the procurement project to be bid; Provided, That a different formula may be adopted subject to the recommendation of the Procuring Entity, which shall be submitted to the GPPB for consideration.

The value of the domestic bidder's current assets and current liabilities shall be based on the latest AFS submitted to the BIR.

For purposes of computing the foreign bidders' NFCC, the value of the current assets and current liabilities shall be based on their latest AFS prepared in accordance with international financial reporting standards.

6) Bidder's Responsibilities

6.1 The Bidder or its duly authorized representative shall submit a sworn statement in the form prescribed in Section IX. Philippine Bidding Documents Related Forms as required in **ITB** Clause 12.1(h)(iv).

6.2 Before submitting their bids, the Bidders are deemed to be knowledgeable of all existing laws, decrees, ordinances, acts and regulations of the Philippines which may affect this Project in any way.

6.3 The Bidder undertook the following responsibilities:

a) Took steps to carefully examine and ensure full understanding and comprehension of the Bidding Document, its requirements, clauses, and provisions;

b) Acknowledged 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;

d) Complied with its responsibility to inquire or secure Supplemental Bid Bulletin(s);

e) Ensured that it is not "blacklisted" or barred from bidding by the Government of the Philippines (GoP) or any of its agencies, offices, corporations, or LGUs, including foreign government, or foreign/ international financing institutions whose blacklisting rules have been recognized by the GPPB; by itself or by reason of its relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity;

f) Ensured that each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and that all statements and information provided therein are true and correct;

g) Authorized the HoPE or its duly authorized representative/s to verify all the documents submitted;

h) Ensured that the signatory is the duly authorized representative of the Bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, to sign, and execute the ensuing contract, accompanied by the duly notarized Special Power of Attorney, Board or Partnership Resolution, or Secretary's Certificate, whichever is applicable;

i) Complied with the disclosure provision under Section 81 and 82 of RA No. 12009 and its IRR in relation to other provisions of RA No. 3019;

j) Complied with existing labor laws and standards. Moreover, the Bidder undertakes to:

    i) Ensure the entitlement of workers to wages, hours of work, safety and health and other prevailing conditions of work as established by national laws, rules and regulations; or Collective Bargaining Agreement (CBA) or arbitration award, if and when applicable.

    In case there is a finding by the Procuring Entity or the Department of Labor and Employment (DOLE) of underpayment or non-payment of workers' wages and wage-related benefits, the Bidder agrees that the performance security or portion of the contract amount shall be withheld in favor of the complaining workers pursuant to appropriate provisions of RA No. 12009,

without prejudice to the institution of appropriate actions under the Labor Code, as amended, and other social legislations;

ii) Comply with Occupational Safety and Health Standards (OSHS) and correct deficiencies, if any.

In case of imminent danger, injury or death of the worker, the Bidder undertakes to suspend contract implementation pending clearance to resume from the DOLE Regional Office, in compliance with the Work Stoppage Order; and

iii) Inform the workers of their conditions of work, labor clauses under the contract specifying wages, hours of work and other benefits under prevailing national laws, rules and regulations; or CBA or arbitration award, if and when applicable, through posting in two (2) conspicuous places in the establishment's premises.

k) Ensured that it did not give or pay, directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity;

l) Examined all instructions, forms, terms, and specifications in the Bidding Documents;

m) Determined and complied with all matters pertaining to the contract to be bid, including but not limited to: (i) the location and the nature of the contract, project, or work; (ii) climatic conditions; (iii) transportation facilities; (iv) 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 (v) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work; and

n) Ensured that all information in the Bidding Documents, including bid or supplemental bid bulletin(s) issued, are correct and consistent. The Procuring Entity shall not assume any responsibility regarding erroneous interpretations or conclusions by the prospective or eligible Bidder out of the data furnished by the Procuring Entity.

Failure to observe any of the above responsibilities shall be at the risk of the Bidder concerned;

6.4 The Bidder, by the act of submitting its bid, shall be deemed to have inspected the site, determined the general characteristics of the contract works and the conditions for this Project and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

6.5 Further, the Bidder shall bear all costs associated with the preparation and submission of its bid, and the Procuring Entity shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

In case of failure of bidding, the Bidding Documents fee may be applied in the re-bidding for the same Project.

6.6 Furthermore, the Bidder should be aware that the Procuring Entity will accept bids only from those that have paid the applicable fee for the Bidding Documents at the office indicated in the Invitation to Bid.

7) Origin of Goods and Services

Unless otherwise indicated in the **BDS**, there is no restriction on the origin of Goods, or Contracting of Works or Services other than those prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

8) Subcontracts

8.1 Unless otherwise specified in the **BDS**, the Bidder may subcontract portions of the Works to an extent as may be approved by the HoPE and as stated in the **BDS**. However, the subcontracted portion shall not exceed fifty (50%), or a different percentage of the ABC, on a per project basis, as approved by the GPPB.

8.2 Subcontracting of any portion of the Project shall not relieve the Bidder from any liability or obligation that may arise from the contract.

8.3 Subcontractors must meet the eligibility criteria as stated in the **BDS** and shall submit the same eligibility documents as the general contractor. Failure of a subcontractor to meet the eligibility criteria does not affect the eligibility of the general contractor for the procurement project. In such case, the portion intended to be subcontracted to the ineligible subcontractor shall be assumed by the general contractor.

8.4 Subcontracting arrangement, if allowed, including the time of submission of the eligibility documents of the subcontractor, shall be disclosed in the **BDS.**

B. Contents of Bidding Documents

9) Pre-Bid Conference

9.1 If so specified in the **BDS**, a pre-bid conference shall be held either at the Procuring Entity's physical address and/or online through videoconferencing, webcasting, or similar technology, or a combination thereof, on the date indicated therein, to clarify and address the Bidders' questions on the technical and financial components of this Project.

9.2 The pre-bid conference shall be held at least twelve (12) calendar days before the deadline for the submission of and receipt of bids, but not earlier than seven (7) calendar days from the posting of the invitation to bid and other bidding documents on the PhilGEPS website.

9.3 Bidders are highly encouraged to attend the pre-bid conference to fully understand the Procuring Entity's requirements. While non-attendance of the Bidder will in no way prejudice its bid, the Bidder is deemed to know any changes and/or amendments to the Bidding Documents, as may be provided in the Supplemental Bid Bulletin.

The proceedings of the pre-bid conference shall be recorded, and the corresponding minutes shall be prepared not later than five (5) calendar days after the pre-bid conference. The minutes shall be made available to prospective Bidders not later than five (5) days upon written request.

9.4 Decisions of the BAC amending any provision of the Bidding Documents shall be issued in writing through a Supplemental Bid Bulletin at least seven (7) calendar days before the deadline for the submission and receipt of bids.

10) Clarification and Amendment of Bidding Documents

10.1 Prospective bidders may request for clarification(s) on and/or interpretation of any part of the Bidding Documents. Such a request must be in writing and submitted to the BAC of the Procuring Entity at the address or electronic mail indicated in the **BDS** or through the electronic bidding facility of PhilGEPS, as may be applicable, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10.2 The BAC shall respond to the said request by issuing a Supplemental Bid Bulletin duly signed by the BAC Chairperson. It shall be made available to all those who have properly secured the Bidding Documents, at least seven (7) calendar days before the deadline for the submission and receipt of Bids.

10.3 Supplemental Bid Bulletins may also be issued upon the Procuring Entity's initiative for purposes of clarifying or modifying any provision of the Bidding Documents not later than seven (7) calendar days before the deadline for the submission and receipt of Bids. Any modification to the Bidding Documents shall be identified as an amendment.

10.4 Any Supplemental Bid Bulletin issued by the BAC shall also be posted on the PhilGEPS website, in any conspicuous place in the premises of the Procuring Entity, and on the website or social media platforms of the Procuring Entity, if available, or such other channels as may be authorized by the GPPB. It shall be the responsibility of all prospective bidders, including those who have properly secured the Bidding Documents, to inquire and secure Supplemental Bid Bulletins that may be issued by the BAC. However, Bidders who have submitted bids before the issuance of the Supplemental Bid Bulletin must be accordingly informed by the BAC, and be allowed to modify or withdraw their bids prior to the deadline for the submission and receipt of bids in accordance with ITB Clause 21.

C. Preparation of Bids

11) Language of Bids

The eligibility requirements or statements, the bids, and all other documents to be submitted to the BAC must be in English. If the eligibility requirements or statements, the bids, and all other documents submitted to the BAC are in foreign language other than English, it must be accompanied by a translation of the documents in English. The documents shall be translated by the relevant foreign government agency, the foreign government agency authorized to translate documents, or a registered translator in the foreign bidder's country. The Bidder shall cause the authentication of the translated documents and shall be authenticated by the appropriate Philippine foreign service establishment or post or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. However, for Contracting Parties to the

Apostille Convention, the documents shall be authenticated through an apostille by the Competent Authority, as defined in Section 20.2.9.2 of the IRR, except for countries identified by the DFA that will still require legalization (red ribbon) by the relevant Embassy or Consulate. The English translation shall govern, for purposes of interpretation of the bid.

12) Documents Comprising the Bid: Technical and Financial Components

12.1 The first bid envelope shall contain the following technical documents, including the eligibility documents:

a) PhilGEPS Certificate of Registration (Platinum Membership) in accordance with Section 20 of the IRR;

b) PCAB License and Registration, in case of Joint Venture (JV);

c) Statement of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid;

d) Statement of the Bidder's SLCC, in accordance with **ITB** Clause 5.5.

The SLCC shall be supported by an Owner's Certificate of Final Acceptance issued by the project owner other than the Contractor, or a final rating of at least satisfactory in the CPES, or a similar performance and monitoring system. In case of contracts with the private sector, an equivalent document shall be submitted;

e) NFCC computation in accordance with **ITB** Clause 5.6;

f) Joint Venture Agreement (JVA), if applicable;

g) Bid Security in the prescribed form and amount in accordance with **ITB** Clause 16, and validity period under **ITB** Clause 15;

h) Project Requirements, which shall include the following:

i) Organizational chart of the personnel to be deployed for the procurement project to be bid;

ii) List of Contractor's personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the procurement project to be bid, with their complete qualifications and experience data. These personnel must meet the required minimum years of experience set in the **BDS**;

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

iv) Omnibus Sworn Statement in accordance with Section 54.3 of the IRR.

12.2 The second bid envelope shall contain the Financial Bid Form, which includes the bid prices and the bill of quantities, in accordance with **ITB** Clauses 13.1.

12.3 Whenever necessary, modifications may be made to the foregoing provisions specifically for major and specialized procurement to suit the particular needs of the Procuring Entity, subject to the approval of the GPPB.

12.4 All bids that exceed the ABC shall not be accepted. Unless otherwise indicated in the **BDS**, for foreign-funded procurement, the ABC shall be applied as the ceiling to bid prices provided the following conditions are met:

a) Bidding Documents are obtainable free of charge on a freely accessible website. If payment of Bidding Documents is required by the Procuring Entity, payment could be made upon the submission of bids.

b) The Procuring Entity has procedures in place to ensure that the ABC is based on recent estimates made by the engineer or the responsible unit of the Procuring Entity and that the estimates are based on adequate detailed engineering and reflect the quality, supervision and risk, and inflationary factors, as well as prevailing market prices, associated with the types of works or goods to be procured.

c) The Procuring Entity has trained cost estimators on estimating prices and analyzing bid variances. In the case of Infrastructure Projects, the Procuring Entity must also have trained quantity surveyors.

d) The Procuring Entity has established a system to monitor and report bid prices relative to ABC and engineer's or Procuring Entity's estimate.

e) The Procuring Entity has established a monitoring and evaluation system for contract implementation to provide feedback on actual total costs of goods and works.

However, the GoP and the foreign government, or foreign or international financing institutions may agree to waive the foregoing conditions.

13) Bid Prices

13.1 The contract shall be for the whole Works, as described in the Bidding Documents, based on the priced Bill of Quantities submitted by the Bidder.

13.2 The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. In case partial bids are allowed in the ITB, bids not addressing or providing all of the required items in the Bidding Documents including, where applicable, the Bill of Quantities, shall be considered non-responsive and shall be automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a zero (0) or a dash (-) for the said item would mean that it is being offered for free to the Government, except those required by law or regulations to be provided for.

13.3 For the given scope of work in the contract as awarded, all bid prices shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as specified in GCC Clause 45.

14) Bid Currencies

14.1 All bid prices shall be quoted in Philippine Peso unless otherwise provided in the **BDS**. However, for purposes of bid evaluation, bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP Daily Reference Exchange Rate Bulletin on the day of the bid opening.[5]

14.2 If so allowed in accordance with **ITB** Clause 14.1, the Procuring Entity, for purposes of bid evaluation and comparing the bid prices, will convert the currencies in which the bid price is expressed to Philippine Peso at the foreign exchange rates.

14.3 Unless otherwise specified in the **BDS**, payment of the contract price shall be made in Philippine Peso.

15) Bid Validity

15.1 Bids shall remain valid for the period specified in the **BDS** which shall not exceed one hundred twenty (120) calendar days from the date of the opening of bids.

15.2 Should it become necessary to extend the validity of the bids and the bid securities beyond one hundred twenty (120) calendar days, the Procuring Entity concerned shall request in writing all those who submitted bids for such extension before the expiration date therefor. Bidders, however, shall have the right to refuse to grant such extension without forfeiting their Bid Security.

16) Bid Security

16.1 The Bidder, at its option, shall submit a Bid Security in the form and amount as stated in the **BDS**, which may include the following:

Form of Bid Security	Amount of Bid Security (Not less than the required Percentage of the ABC)
(a) Cash or cashier's/manager's check issued by a bank. *For biddings conducted by LGUs, the Cashier's or Manager's check may be issued by other banks certified by the BSP as authorized to issue such financial instrument.*	Two percent (2%)
(b) Bank draft/guarantee or irrevocable Letter of Credit issued by a bank; Provided, however, that it shall be confirmed or authenticated by a	Five percent (5%)

[5] RA No. 8183 or "An Act to Assure Uniform Value to Philippine Coin and Currency."

local bank, if issued by a foreign bank. *For biddings conducted by LGUs, the Bank Draft/ Guarantee, or irrevocable letter of credit may be issued by other banks certified by the BSP as authorized to issue such financial instrument.*	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance on as authorized to issue such security.	Five percent (5%)
(d) Bid Securing Declaration	Not Applicable

The Bid Security shall be denominated in Philippine Peso and posted in favor of the Procuring Entity.

16.2 The Bid Security should be valid for the period specified in the **BDS**. Any bid not accompanied by an acceptable Bid Security shall be considered as non-responsive and rejected by the Procuring Entity.

16.3 In no case shall the Bid Security be returned later than the expiration of the bid validity period indicated in the Bidding Documents, unless it has been extended in accordance with Section 57.2 of the IRR. In case the bidder is required to extend its bid validity, the bidder may, at its discretion, substitute a Bid Securing Declaration for the extended period as a replacement of its Bid Security; Provided, that the option to substitute is indicated in the **BDS.**

16.4 Upon signing and execution of the contract, pursuant to **ITB** Clause 29, and the posting of the performance security pursuant to **ITB** Clause 30, the Bid Security of the successful Bidder's Bid Security will be discharged, but in no case later than its validity period as indicated in **ITB** Clause 15.

16.5 The Bid Security may be forfeited based on any of the following grounds, as provided under Rule VIII, X, XI, and XXI of the IRR:

a) If a Bidder:

i) With the Lowest Calculated Responsive Bid (LCRB), Most Economically Advantageous Responsive Bid (MEARB), Most Advantageous Responsive Bid (MARB), Single Calculated and Responsive Bid (SCRB), Single Economically Advantageous Responsive Bid (SEARB), or Single Advantageous Responsive Bid (SARB) withdraws, fails, refuses or is unable to: (i) submit the documents required under Section 66.5 of the IRR; (ii) enter into contract with the Procuring Entity; or (iii) post the required performance security within the period stipulated in the IRR and in accordance with **ITB** Clause 30;

ii) Causes the delay, without justifiable cause, of the screening for eligibility, opening of bids, evaluation and post evaluation of Bids, and awarding of contracts;

iii) Refuses to clarify or validate in writing its bid during post-qualification within a period of seven (7) calendar days from receipt of the request for clarification;

iv) Withdraws a bid, or refuses to accept an award, or refuses or fails to enter into contract with the Procuring Entity without justifiable cause, after the approval of the HoPE for having been the declared LCRB or MEARB, as the case may be;

v) Refuses or fails to furnish performance security within the prescribed time;

vi) Commits of three (3) or more of any of the acts imposed with suspension, as provided under Section 99 of the IRR;

vii) Uses force, fraudulent machinations, coercion, undue influence or pressure on any member of the BAC or any officer or employee of the Procuring Entity to take a particular action for its own favor or gain, or to the advantage of a particular bidder;

viii) Colludes with one (1) or more bidders and submitting different bids as if they were bona fide, when they knew that one or more of them was so much higher than the other that it could not be honestly accepted and that the contract will surely be awarded to the pre-arranged lowest bid;

ix) Maliciously submits different bids through two (2) or more persons, corporations, partnerships, or any other business entity in which it has interest, to create the appearance of competition that does not in fact exist so as to be declared as the winning bidder;

x) Enters into an agreement with other bidder/s which call upon one to refrain from bidding for procurement contracts, or which call for withdrawal of bids already submitted, or which are otherwise intended to secure an undue advantage to any of the bidders;

xi) Fails to faithfully disclose its relationship, regardless of the time of its discovery, with the HoPE, members of the BAC, the TWG, and the BAC Secretariat, the head of the PMO or the End-User or Implementing Unit, and the project consultants of the Procuring Entity, or of the procurement agent, whichever is applicable, by consanguinity or affinity up to the third civil degree pursuant to Section 81 of the IRR;

xii) Submits beneficial ownership information containing false entries;

xiii) Allows the use of one's name or uses the name of another for purposes of public bidding;

xiv) Submits eligibility requirements and bids containing false information or falsified documents or the concealment of such information that will materially alter the outcome of eligibility screening or any stage of the procurement;

xv) Accesses the contents of any Bid submitted to the Procuring Entity before the opening of bids, without authorization;

xvi) Has any documented attempt to unduly influence the outcome of the bidding;

xv) Employs schemes which stifle or suppress any procurement activity; or

xvi) Commits a third offense imposed with blacklisting under the Act by the same Procuring Entity, or a combination of three (3) violations imposed with blacklisting by the Procuring Entity and other Procuring Entities, as posted on the GPPB portal;

b) If a Winning Bidder:

i) Conducts poor performance or unsatisfactory quality and/or progress of work. Poor performance shall be as follows:

i.i) Negative slippage of fifteen percent (15%) and above within the critical path of the project due entirely to the fault or negligence of the winning bidder; or

i.ii) Non-compliance of the materials and workmanship with the approved specifications arising from the fault or negligence of the winning bidder.

ii) In case it is determined prima facie that the winning bidder has engaged, before or during the implementation of the contract, in the following unlawful deeds and behaviors relative to contract acquisition and implementation:

ii.i) Corrupt, fraudulent, collusive and coercive practices;

ii.ii) Drawing up or using forged documents; or

ii.iii) Using adulterated materials, means or methods, or engaging in production contrary to rules of science or trade.

iii) Assigns or subcontracts the contract or any part thereof or substituting key personnel named in the proposal without prior written approval by the Procuring Entity;

iv) Willfully or deliberately abandons or does not perform the project or contract by the winning bidder resulting in substantial breach thereof without lawful and/or just cause;

v) Has its contract terminated due to its default or unlawful acts; or

vi) Fails to comply with the provision on warranty that requires to repair any noted defect or damage to the Infrastructure Project due to the use of materials of inferior quality within ninety (90) calendar days from the issuance of the order by the HoPE to undertake such repairs.

17) Format and Signing of Bids

17.1 Bidders shall submit their bids through their duly authorized representative using the appropriate forms provided in Section IX. Philippine Bidding Documents Related Forms on or before the deadline specified in the **ITB** Clause 19 in two (2) separate sealed bid envelopes which shall be submitted simultaneously, whether through manual or online submission. The first shall contain the technical component of the bid, including the eligibility requirements under **ITB** Clause 12, and the second shall contain the financial component of the bid.

17.2 Forms as mentioned in **ITB** Clause 17.1 must be completed without any alterations to their format. No substitute form shall be accepted.

17.3 Each and every page of the Bid Form, including the Bill of Quantities, under Section IX hereof, shall be signed by the duly authorized representative/s of the Bidder. Failure to do so shall be a ground for the rejection of the bid.

17.4 Any insertions, erasures, or overwriting shall be valid only if they are signed or initialed by the duly authorized representative/s of the Bidder.

18) Sealing and Marking of Bids

18.1 Bidders shall enclose their technical documents described in **ITB** Clause 12 in one sealed envelope marked “TECHNICAL COMPONENT,”, and the financial component in another sealed envelope marked “FINANCIAL COMPONENT,”, sealing them all in an outer envelope marked “BID.”

18.2 The Bid shall be typed or written in ink and shall be signed by the Bidder or its duly authorized representative/s.

18.3 All envelopes shall:

a) contain the name of the contract to be bid in capital letters;

b) bear the name and address of the Bidder in capital letters;

c) be addressed to the Procuring Entity’s BAC in accordance with **ITB** Clause 18.1;

d) bear the specific identification of this bidding process indicated in the **ITB** Clause 1.1; and

e) bear a warning “DO NOT OPEN BEFORE…” the date and time for the opening of bids, in accordance with **ITB** Clause 19.

18.4 For manually submitted bid envelopes that are not properly sealed and marked, as required in the Bidding Documents, the same shall be accepted; Provided, That the bidder or its duly authorized representative shall acknowledge such

condition of the bid as submitted. On the other hand, unsealed or unmarked bid envelopes, or bids that cannot be opened or corrupted in case of online submission, shall be rejected.

The BAC shall assume no responsibility for misplaced or lost contents of the improperly sealed or marked bid, or for its premature opening.

D. Submission and Opening of Bids

19) Deadline for Submission of Bids

Bids must be received by the Procuring Entity's BAC at the address indicated in the **Invitation to Bid,** or through the e-bidding facility of the PhilGEPS, on or before the date and time indicated in the **BDS**.

20) Late Bids

Bids, including the eligibility requirements, submitted after the deadline shall be rejected by the BAC. The BAC shall record in the Minutes of the Meeting the submission and opening of bids, the Bidder's name, its representative, and the time the late bid was submitted.

21) Modification and Withdrawal of Bids

21.1 Bidders may modify their bids before the deadline for the submission and receipt of bids.

a) For manual submission and receipt of bids, the Bidders shall not be allowed to retrieve their original bid, but shall only be allowed to submit the bid modification by sending another bid, equally sealed, properly identified, linked to its original bid, and marked as a "modification," thereof, and stamped "received" by the BAC. Bid modifications received after the applicable deadline shall not be considered and shall be returned to the bidder unopened.

b) For online submission of bids, the Bidders shall not be allowed to retrieve their original Bid, but shall only be allowed to submit the bid modification, send another Bid equally secured, properly identified labelled as a "modification" of the one previously submitted. The time indicated in the latest bid receipt page generated shall be the official time of submission. Bids modification submitted after the applicable deadline shall not be accepted.

21.2 Bidders may withdraw their bids in writing before the deadline for submission and receipt of bids. Withdrawal of bids after the applicable deadline shall be subject to appropriate sanctions as prescribed in the IRR.

Bidders may also express their intention not to participate in the bidding in writing, which should be received by the BAC before the deadline for submission and receipt of bids. Bidders that withdraw their bids shall no longer be allowed to submit another bid for the same contract, directly or indirectly.

21.3 No bid may be modified after the deadline for submission and receipt of bids. Further, no bid may be withdrawn in the interval between the deadline for submission and receipt of bids, and the expiration of bid validity specified by

the Bidder in the Financial Bid Form. Withdrawal of bid during this interval shall result in the forfeiture of the Bidder's Bid Security pursuant to **ITB** Clause 16.5, and the imposition of administrative sanctions as prescribed by RA No. 12009 and without prejudice to the imposition of civil and criminal sanctions as provided under applicable laws.

Alternative Bids shall be rejected. For this purpose, Alternative Bid shall pertain to an offer made by a bidder in addition or as a substitute to its original bid, which may be included as part of its original bid or submitted separately. A bid with options shall likewise be considered an Alternative Bid regardless of whether said bid proposal is contained in a single envelope or submitted in two (2) or more separate bid envelopes.

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.

Each Bidder shall submit only one Bid, either individually or as a partner in a JV. A Bidder who submits or participates in more than one bid (other than as a subcontractor if a subcontractor is permitted to participate in more than one bid) will cause all the proposals with the Bidder's participation to be disqualified. This shall be without prejudice to any applicable criminal, civil and administrative penalties that may be imposed upon the persons and entities concerned.

22) Opening and Preliminary Examination of Bids

22.1 The BAC shall open the bids in public, immediately after the deadline for submission and receipt of bids, as specified in the **BDS**. In case the Bids cannot be opened as scheduled due to justifiable reasons, the BAC shall take custody of the submitted Bids and reschedule the opening of Bids on the next working day or at the soonest possible time, through the issuance of a Notice of Postponement to be posted on the PhilGEPS website and the website of the Procuring Entity concerned.

22.2 The manner of opening of the bids for Infrastructure Projects shall depend on the award criterion to be adopted, as follows:

a) For LCRB and MEARB, the BAC shall open the technical and financial proposals on the same day; and

b) For MARB, only the technical proposals shall be opened while the financial proposals shall remain unopened and shall be kept securely by the BAC until the specified time of their opening as indicated in the **BDS**. Only the financial proposals of the bidders who have met the highest technical score for MAB shall be opened.

22.3 The Procuring Entity shall prepare the minutes of the proceedings of the bid opening that shall include, as a minimum: (a) names of Bidders, their bid price (per lot, if applicable, and/or including discount, if any), bid security, findings of preliminary examination, and whether there is a withdrawal or modification; and (b) attendance sheet. The BAC members shall sign the abstract of bids as read.

22.4 The Bidders or their duly authorized representatives may attend the opening of bids. The BAC shall ensure the integrity, security, and confidentiality of all submitted bids. The Abstract of bids, as read, and the minutes of the bid opening shall be made available to the public, upon written request and payment of a specified fee to recover the cost of materials.

22.5 To ensure transparency and accurate representation of the bid submission, the BAC Secretariat shall notify in writing all bidders whose bids it has received through mail at its PhilGEPS-registered physical address or official e-mail address. The said notice shall be issued within seven (7) calendar days from the date of the bid opening.

E. Evaluation and Comparison of Bids

23) Process to be Confidential

23.1 Members of the BAC, its staff and personnel, Secretariat, and TWG, as well as Observers, are prohibited from making or accepting any communication with any bidder regarding the evaluation of their bids until the issuance of the Notice of Award, unless otherwise allowed in the case of **ITB** Clause 24.

23.2 Any effort by a Bidder to influence the Procuring Entity in the Procuring Entity's decision in respect of bid evaluation, bid comparison or contract award will result in the rejection of the bid.

24) Clarification of Bids

To assist in the evaluation, comparison, and post-qualification of the bids, the Procuring Entity may ask in writing any Bidder for a clarification of its bid. All responses to requests for clarification shall be in writing. Any clarification submitted by a Bidder in respect to its bid that is not in response to the request of the Procuring Entity shall not be considered.

25) Detailed Evaluation and Comparison of Bids

25.1 The Procuring Entity's evaluation of bids shall be based on the bid price quoted in the Bid Form, which includes the Bill of Quantities.

25.2 The Procuring Entity will undertake the detailed evaluation and comparison of the bids which have passed the opening and preliminary examination of bids, pursuant to **ITB** Clause 22, to determine the Lowest Calculated Bid (LCB), Most Economically Advantageous Bid (MEAB), and Most Advantageous Bid (MAB).

25.3 The award criterion shall be determined as follows:

a) For LCB:

i) The detailed evaluation of the financial component of the bids, to establish the correct calculated prices of the bids; and

ii) The ranking of the total bid prices as so calculated from the lowest to highest, where the bid with the lowest price shall be identified as the LCB.

b) For MEAB, the BAC shall evaluate the quality and price proposals to determine the MEAB using the following steps:

i) The quality proposal together with the price proposal shall be considered in the evaluation of bids. The quality proposals shall be evaluated first using the criteria in the **BDS**. The price proposals of the bids that meet the minimum quality score shall then be opened.

ii) The price and quality proposals shall be given corresponding weights with the price proposal given a minimum weight of fifteen percent (15%) up to a maximum of forty percent (40%). The weight of the quality criteria shall be adjusted accordingly such that their total weight in percent together with the weight given to the price proposal shall be equal to one hundred percent (100%).

iii) To further promote green public procurement, the sustainability of materials or structures with green specifications shall be given greater weight in the evaluation of bids. As approved by the BAC, the exact weights shall be indicated in the **BDS.** The BAC shall rank the bidders in descending order based on the combined numerical ratings of their quality and price proposals. The bidder with the best overall score using the quality-price ratio shall be referred to as the MEAB.

iv) The HoPE shall approve or disapprove the recommendations of the BAC within two (2) calendar days after receipt of the results of the evaluation from the BAC.

The quality component shall be assessed on the basis of criteria with corresponding numerical weights indicated in the **BDS**, which may include qualitative, environmental, or social aspects linked to the subject matter of the contract. These may include any or a combination of the following:

a) Quality and technical merit, including technical competence and a credible track record;

b) Aesthetic and functional design and characteristics;

c) Approach and methodology;

d) Accessibility;

e) Tools and equipment;

f) Social, environmental, economic, and innovative characteristics;

g) Organization, qualification, and experience of employees or staff assigned to perform the contract;

h) Ongoing contracts and work commitments; or

i) Other relevant criteria in relation to the subject Infrastructure Projects to be procured.

c) For MAB

i) The BAC shall evaluate the quality proposals to determine the MAB using the quality components. The quality components shall be assessed on the basis of the criteria with corresponding numerical weights indicated in the **BDS** to determine the bidder with the highest technical rating.

ii) The second bid envelope of the bidder obtaining the highest technical rating shall be opened. If the financial proposal is equal to or lower than the ABC, the bid shall be accepted and determined as the MAB; otherwise, the same shall be rejected and the bidder will be disqualified.

25.4 In order to eliminate bias in evaluating the quality proposals, it is recommended that the highest and lowest scores for each bidder for each criterion shall not be considered in determining the average scores of the bidders, except when the evaluation is conducted in a collegial manner.

25.5 The BAC shall immediately conduct a detailed evaluation of all bids using non-discretionary criteria in considering the following:

a) Completeness of the bid. Unless the **BDS** allows partial bids, bids not addressing or providing all of the required items in the BDS shall be considered non-responsive and, thus, automatically disqualified.

However, when no price or a zero (0) or a dash (-) is indicated in a required item in the bid form, the same shall be construed that it is being offered for free to the Government, except those required by law or regulations to be provided for; and

b) Arithmetical corrections. The BAC shall consider computational errors and omissions to enable proper comparison of all eligible bids. It may also consider bid correction if expressly allowed in the **BDS**. Any adjustment shall be calculated in monetary terms to determine the calculated prices.

25.6 Based on the detailed evaluation of bids, those that comply with the above-mentioned requirements shall be ranked in the ascending order of their total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, to identify the LCB, MEAB, or MAB. Total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, which exceed the ABC shall not be considered, unless otherwise indicated in the **BDS**.

25.7 The BAC shall evaluate all bids on an equal footing to ensure fair and competitive bid comparison. For this purpose, all bidders shall be required to include in their bids the cost of all taxes, such as, but not limited to, value-added tax (VAT), income tax, local taxes, and other fiscal levies and duties. Such bids, including said taxes, shall be the basis for the bid evaluation and comparison.

25.8 If so indicated pursuant to **ITB** Clause 1.1, bids may be submitted for individual lots, or for any combination thereof, provided that all bids and combinations of bids shall be received by the same deadline and opened and evaluated simultaneously so as to determine the bid or combination of bids offering the lowest calculated cost to the Procuring Entity. Bid prices quoted shall correspond to all of the requirements specified for each lot. Bid Security as

required by **ITB** Clause 16 shall be submitted for each contract (lot) separately. The basis for evaluation of lots is specified in **BDS** Clause 25.5 (a).

26) Post - Qualification

26.1 The BAC shall determine to its satisfaction whether the Bidder that is evaluated as having submitted the LCB, MEAB, or MAB, as the case may be, complies with and is responsive to all the requirements and conditions specified in **ITB** Clauses 5 and 12. The Bidder, within a non-extendible period of five (5) calendar days from receipt of notice from the BAC that it submitted the LCB, MEAB, or MAB, shall submit all the eligibility documents supporting its PhilGEPS Certificate of Registration (Platinum Membership), its latest income and business tax returns filed for the preceding quarter which should not be earlier than two (2) quarters from the date of submission and receipt of bid, and other appropriate licenses and permits required by law and stated in the **BDS**.

26.2 Failure to submit any of the post-qualification requirements on time, or a finding against the veracity thereof, shall disqualify the Bidder for award; Provided, That in the event that a finding against the veracity of any of the documents submitted is made, it shall cause the forfeiture of the Bid Security.

26.3 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted pursuant to **ITB** Clause 12, as well as other information as the Procuring Entity deems necessary and appropriate, using a non-discretionary "pass/fail" criterion, which shall be completed within a period of twelve (12) calendar days.

26.4 If the BAC determines that the bidder with the LCB, MEAB, or MAB passes all the criteria for post-qualification, it shall declare the said bid as the LCRB, MEARB, MARB, SCB, SEAB, or Single Advantageous Bid (SAB) and recommend to the HoPE the award of contract to the said bidder at its submitted bid price or its calculated bid price, whichever is lower or, in the case of quality-based evaluation procedure, submitted bid price or its negotiated price, whichever is lower.

If, however, the BAC determines that the bidder with the LCB, MEAB, MAB, SCB, SEAB, or SAB fails to meet the post-qualification criteria, it shall immediately notify the Bidder in writing of its post-disqualification and the grounds for such determination.[6]

26.5 Immediately after the BAC has notified the first bidder of its post-disqualification, and notwithstanding any pending request for reconsideration thereof, the BAC shall initiate and complete the same post-qualification process on the bidder with the second LCB, MEAB, or MAB. If the second bidder passes the post-qualification and provided that the request for reconsideration of the first bidder has been denied, the second bidder shall be post-qualified as the bidder with the LCB, MEAB, or MAB.

26.6 If the second bidder, however, fails the post-qualification, the procedure for post-qualification shall be repeated for the bidder with the next LCB, MEAB, or MAB and so on, until the LCRB, MEARB, or MARB, as the case may be, is

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6 Sec 63.5 of the IRR.

determined for award, subject to the procedure of Notice and Execution of Award.

26.7 Within a period not exceeding ten (10) calendar days from the determination by the BAC of the LCRB, MEARB, MARB, SCRB, SEARB, or SARB and the recommendation to award the contract, the HoPE or its duly authorized representative shall approve or disapprove the said recommendation.

26.8 In case of approval, the HoPE or its duly authorized representative shall immediately issue the Notice of Award to the bidder with the LCRB, MEARB, MARB, SCRB, SEARB, or SARB, as the case may be.

In the event that the approving authority shall disapprove the resolution on the award of the contract, such disapproval shall be based only on valid, reasonable, and justifiable grounds as enumerated under Section 70 of the IRR to be expressed in writing. A copy of the decision disapproving the resolution shall be furnished to the BAC and the bidder.

27) Reservation Clause

27.1 Notwithstanding the eligibility or post-qualification of a bidder and without incurring any liability, the HoPE or its duly authorized representative at any stage of the procurement, reserves the right to review its qualifications, reject any and all bids, declare a failure of bidding or not award the contract in the following situations:

a) If it has reasonable grounds to believe that a misrepresentation has been made by the said bidder; or

b) If it has reasonable grounds to believe that there has been a change in the bidder's capability to undertake the project from the time it submitted its eligibility requirements.

Should such review uncover any misrepresentation made in the eligibility and bidding requirements, statements or documents, or any changes in the situation of the Bidder which will adversely affect its capability to undertake the Project so that it no longer meets the prescribed eligibility or bid evaluation criteria, the Procuring Entity shall consider the said Bidder as ineligible and disqualify it from participating further in the bidding process or being awarded the contract.

27.2 Based on the following grounds, the HoPE or its duly authorized representative reserves the right to reject any and all Bids, declare a Failure of Bidding at any time prior to the contract award, or not to award the contract, without thereby incurring any liability, and make no assurance that a contract shall be entered into as a result of the bidding:

a) If there is *prima facie* evidence of collusion between appropriate public officers or employees of the Procuring Entity, or between the BAC and any of the bidders, or if the collusion is between or among the bidders themselves, or between a bidder and a third party, including any act which restricts, suppresses or nullifies or tends to restrict, suppress or nullify competition or influences or tends to influence the bidding process;

b) If the BAC is found to have failed in complying with the applicable law or in following the prescribed bidding procedures; or

c) If there are any justifiable and reasonable ground where the award of the contract will not redound to the benefit of the government, in instances where (i) the physical and economic conditions have significantly changed so as to render the project no longer economically, financially or technically feasible as determined by the HoPE; (ii) the Project is no longer necessary as determined by the HoPE; and (iii) the source of funds for the Project has been withheld or reduced through no fault of the Procuring Entity.

F. Award of Contract

28) Contract Award

28.1 Subject to **ITB** Clause 26, the HoPE or its duly authorized representative shall award the contract to the Bidder whose bid has been determined to be the LCRB, MEARB, MARB, SCRB, SEARB, or SARB, as the case may be.

28.2 Prior to the expiration of the period of bid validity, the Procuring Entity shall notify the winning Bidder in writing that its bid has been accepted, through a Notice of Award duly received by the Bidder or its representative personally or by registered mail or electronically, receipt of which must be confirmed in writing within two (2) days by the Bidder with the LCRB, MEARB, MARB, SCRB, SEARB, or SARB, as applicable, and submitted personally or sent by registered mail or electronically to the Procuring Entity.

28.3 Within ten (10) calendar days from receipt by the winning bidder of the Notice of Award, the following conditions should be complied with before the contract may be awarded:

a) Submission of the following documents:

i) Valid JVA, if applicable;

ii) The SEC Certificate of Registration of the foreign corporation, if applicable; or

iii) Valid PCAB license and registration for the type and cost of the Project for foreign bidders when the Treaty or International or Executive Agreement expressly allows submission of such license and registration as a pre-condition to the Notice of Award.

b) Posting of the performance security in accordance with **ITB** Clause 30; and

c) Signing of the contract as provided in **ITB** Clause 29.

29) Signing of the Contract

29.1 Within ten (10) calendar days from receipt of the Notice of Award, the winning Bidder shall post the required performance security, sign and date the contract, and return it to the Procuring Entity.

29.2 The Procuring Entity shall enter into a contract with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.

29.3 The following documents shall form part of the contract:

a) Contract Agreement;

b) Bidding Documents;

c) Winning Bidder's bid, including the technical and financial proposals, and all other documents/statements submitted (*e.g.,* Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;

d) Performance Security;

e) Notice of Award of Contract; and

f) Other contract documents that may be required by existing laws and/or specified in the **BDS**.

30) Performance Security

30.1 To guarantee the faithful performance by the winning bidder of its obligations under the contract, it shall post a performance security prior to the signing of the contract. Furthermore, the successful bidder shall be required to update the performance security posted before to the issuance of a variation order, if any.

30.2 Sectors enumerated under Section 76.1[7] of the IRR may be allowed to post Performance Securing Declaration (PSD) as specified in the **BDS.**

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[7] Section 76.1. *The GPPB, once data is available from relevant agencies, shall maintain a registry of entities belonging to the following sectors:*
a) Farmers as certified by the Department of Agriculture (DA);
b) Fisherfolk as certified by the Bureau of Fisheries and Aquatic Resources (BFAR);
c) Persons with disabilities as certified by the National Council for Disability Affairs (NCDA) pursuant to RA No. 7277, otherwise known as the Magna Carta for Disabled Persons, as amended;
d) Solo parents as certified by the Department of Social Welfare and Development (DSWD); e) Microenterprises and social enterprises as certified by the MSMED Council;
f) Startups, spin-offs, and other forms of entity involved in science, technology, and innovation activities as certified by the DTI, DICT, NIC or the Department of Science and Technology (DOST), as may be applicable;
g) Cooperatives duly registered with the CDA pursuant to RA No. 6938, otherwise known as the Cooperative Code of the Philippines, as amended; and
h) Other relevant sectors as may be determined by the GPPB to ensure inclusivity and diversity in the procurement process.

30.3 The performance security shall be in a form selected by the Procuring Entity in the amount indicated in the **BDS**, which shall not be less than the percentage of the total contract price in accordance with the following price schedule:

Form of Performance Security	Amount of Performance Security (Not less than the Percentage of the Total Contract Price)
a) Cash or Cashier's or Manager's check issued by a bank. *For biddings conducted by LGUs, the cashier's or manager's check may be issued by other banks certified by the BSP as authorized to issue such financial instrument.*	Ten percent (10%)
b) Bank draft or guarantee or irrevocable Letter of Credit issued by a local bank. If issued by a foreign bank, it shall be confirmed or authenticated by a local bank.	
c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the IC as authorized to issue such security.	Thirty Percent (30%)

30.4 The performance security shall be denominated in Philippine Peso and posted in favor of the Procuring Entity, which shall be forfeited in the event it is established that the winning bidder is in default in any of its obligations under the contract.

31) Notice to Proceed

The Procuring Entity shall issue the Notice to Proceed to the winning Bidder not later than three (3) calendar days from the date of approval of the contract by the appropriate signatories. All notices called for by the terms of the contract shall be effective only at the time of receipt thereof by the successful Bidder.

32) Protest Mechanism

Decisions of the BAC in all stages of procurement may be protested to the HoPE in accordance with Section 83 of the IRR.

Section III. Bid Data Sheet

Notes on the Bid Data Sheet

This Section is intended to assist the Procuring Entity in providing specific information relative to corresponding clauses in the ITB included in Section II. Instructions to Bidders, and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS the information and requirements relevant to the circumstances of the Procuring Entity, including procurement processing details; the applicable rules regarding bid price and currency; and the bid evaluation criteria that will apply to the bids. In preparing Section III, the following aspects should be checked:

a) Information that specifies and complements provisions of Section II. Instructions to Bidders must be incorporated; and

b) Amendments and/or supplements, if any, to provisions of Section II. Instructions to Bidders as necessitated by the circumstances of the specific procurement, must also be incorporated.

Bid Data Sheet

ITB Clause	
1.1	The Procuring Entity is *National Irrigation Administration - Magat River Integrated Irrigation System Head Office* The Project title is **REHABILITATION AND PROTECTION WORKS OF SCOURED EMBANKMENT ALONG MACAÑAO CHECKGATE STA. 0+310 - 0+608 (ONE SIDE ONLY) (TOTAL LENGTH = 298.00 M)**. The identification number of the Contract is **CONTRACT NO. EPA-2026-MARIIS-DIV-RNIS-03**.
2	The Funding Source is: 2.1 The GOP through the source of funding as indicated below for *CY 2026* in the amount of **PHP 58,272,368.37** 2.2 The source of funding is: a. NGA,the National Expenditure Program.
3.1	No further instructions.
5.2	Bidding is restricted to eligible bidders as defined in ITB Clause 5.2.
5.4	The required track record shall be the following: The Bidder must have completed an SLCC that is similar to the procurement project to be bid, and whose value must be equivalent to at least fifty percent (50%) of the ABC, adjusted to current prices using the Philippine Statistics Authority (PSA) consumer price indices; Provided, that any change to the fifty percent (50%) requirement may be allowed, subject to the recommendation of the Procuring Entity, which shall be submitted to the GPPB for consideration; Provided, further, that contractors under Small A and Small B categories without similar experience on the procurement project to be bid may be allowed to bid if the cost of such contract is not more than the Allowable Range of Contract Cost of their registration based on the guidelines as prescribed by the PCAB. Contracts similar to the Project shall be those described as follows: ***Construction of Flood Protection Works***
7	No further instructions.
8.1	*"*Subcontracting is not allowed.*"*
8.3	*"*Not applicable."
9.1	The Procuring Entity will hold a pre-bid conference for this Project on ***07 January 2026, 2:30 P.M.*** at ***EOD Mini Conference Head Office, NIA-MARIIS, Minante I, Cauayan City*** and/or through video-conferencing, webcasting, or similar technology, or a combination thereof via

<table>
<tr><td></td><td><u>https://meet.google.com/vsd-dnae-cwm</u> .</td></tr>
<tr><td>10.1</td><td>The Procuring Entity’s address is:

JEROME M. ELEGADO

Head, BAC Secretariat

NIA-MARIIS Head Office

Minante I, Cauayan City, Isabela 3305

Telephone No. (078) 307 0037

Email address: <u>mariis.bac@nia.gov.ph</u></td></tr>
<tr><td>12.1(h)(ii)</td><td>The minimum work experience requirements for key personnel are the following:

<table>
<tr><th><u>Key Personnel</u></th><th><u>General Experience</u></th><th><u>Relevant Experience</u></th></tr>
<tr><td>1 Project Manager</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Project Engineer</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Materials Engineer</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Safety Officer 3 (SO3)</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Foreman</td><td>Construction Jobs</td><td>at least 1-year experience</td></tr>
</table></td></tr>
<tr><td>12.1(h)(iii)</td><td>The minimum major equipment requirements are the following:

<table>
<tr><th><u>Equipment</u></th><th><u>Capacity</u></th><th><u>Number of Units</u></th></tr>
<tr><td>Backhoe</td><td>0.80 cu.m.</td><td>1 – unit</td></tr>
<tr><td>Concrete Mixer</td><td>One Bagger</td><td>2 – units</td></tr>
<tr><td>Crane</td><td>20-25 Tons</td><td>1 – unit</td></tr>
<tr><td>Vibro Hammer</td><td>0.80 cu.m.</td><td>1 – unit</td></tr>
<tr><td>Bar Cutter/Bender</td><td>-</td><td>2 – units</td></tr>
<tr><td>Welding Machine</td><td>300 A</td><td>1 - unit</td></tr>
<tr><td>Concrete Vibrator</td><td>10 Tons</td><td>4 - unit</td></tr>
</table></td></tr>
<tr><td>12.4</td><td>The ABC is PHP 58,272,368.37. Any bid with a financial component exceeding this amount shall not be accepted.</td></tr>
<tr><td>14.1</td><td>The bid prices shall be quoted in Philippine Peso.</td></tr>
<tr><td>14.3</td><td>Payment shall be made in Philippine Peso.</td></tr>
<tr><td>15.1</td><td>Bids will be valid for one hundred twenty (120) calendar days from bid opening.</td></tr>
<tr><td>16.1</td><td>The Bid Security shall be in the form of a Bid Securing Declaration from any of the following:</td></tr>
</table>

	1. The amount of not less than **One Million One Hundred Sixty Five Thousand Four Hundred Forty Seven & 37/100 Pesos Only (Php 1,165,447.370)** ***or 2% of ABC****,* if bid security is in cash. 2. The amount of not less than **Two Million Nine Hundred Thirteen Thousand Six Hundred Eighteen & 42/100 Pesos Only (Php 2,913,618.420) or 5% of ABC** if Surety Bond.
16.2	The Bid Security shall be valid until one hundred twenty (120) calendar days from bid opening.
16.3	Substitution of the bid security is not allowed.
19	The address for submission of bids is at **EOD Mini Conference Head Office, NIA-MARIIS, Minante I, Cauayan City**. The deadline for submission of bids is **19 January 2026, at 8:45 A.M**.
21.5	*"*No further instructions."
22.1	The date and time of bid opening is **EOD Mini Conference Head Office, NIA-MARIIS, Minante I, Cauayan City.** The place of bid opening is **19 January 2026, at *2:30 P.M.***
22.2(b)	"Not applicable".

25.3 (b)(i)	The quality component shall be assessed on the basis of criteria with corresponding numerical weights, which may include qualitative, environmental, or social aspects linked to the subject matter of the contract. These may include any or a combination of the following: a) Quality and technical merit, including technical competence and a credible track record; b) Aesthetic and functional design and characteristics; c) Approach and methodology; d) Accessibility; e) Tools and equipment; f) Social, environmental, economic, and innovative characteristics; g) Organization, qualification, and experience of employees or staff assigned to perform the contract; h) Ongoing contracts and work commitments; i) After-sales service and technical assistance; j) Delivery conditions, such as delivery period and delivery process; k) Disposal measures; or l) Other relevant criteria in relation to the subject Goods or Infrastructure Projects to be procured.
25.3 (c)(i)	*"Not applicable"*
25.5 (a)	Partial bid is not allowed. The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
25.5 (b)	Bid correction is not allowed.
25.6	No further instructions.
26.1	*Valid Philippine Contractors Accreditation Board (PCAB) License:* ***General Engineering (Irrigation or Flood Control) – Medium A***
29.3(f)	*List 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* Program Evaluation and Review Technique

	(PERT), Critical Path Method (CPM) *or other acceptable tools of project scheduling.*
30.2	Posting Performance Securing Declaration in lieu of performance security may be allowed in this Project.
30.3	The Performance Security shall be in the form of the following: 1) The amount of not less than **30% of *the contract price*** if performance security is Surety Bond.

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The GCC in Section IV, read in conjunction with the SCC in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

The GCC herein shall not be altered. Any changes and complementary information which may be needed shall be introduced only through the SCC in Section V.

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1) General Terms

In this Contract, the following terms shall be interpreted as indicated:

1.1 The **Intended Completion Date** refers to the date specified in the **SCC** when the Contractor is expected to have completed the Works. The intended Completion Date may be revised only by the Procuring Entity by issuing an extension of time or an acceleration order.

1.2 The **Procuring Entity** is the party who employs the Contractor to carry out the Works stated in the **SCC**.

1.3 The **Site** is the place provided by the Procuring Entity where the Works shall be executed and any other place or places which may be designated in the **SCC**, or notified to the Contractor by the Procuring Entity as forming part of the Site.

1.4 The **Start Date**, as specified in the **SCC**, is the date when the Contractor is obliged to commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.

1.5 **Work(s)** refer to the Permanent Works and Temporary Works to be executed by the Contractor in accordance with this Contract, including (i) the furnishing of all labor, materials, equipment and others incidental, necessary or convenient to the complete execution of the Works; (ii) the passing of any tests before acceptance by the Procuring Entity; (iii) and the carrying out of all duties and obligations of the Contractor imposed by this Contract as described in the **SCC.** In line with this, Temporary Works are works designed, constructed, and installed by the Contractor that are needed for construction or installation of the Permanent Works, which are subsequently removed.

2) Interpretation

2.1 In interpreting the Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of this Contract unless specifically defined. The Procuring Entity will provide instructions clarifying queries about the Conditions of Contract.

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

2.3 The documents forming this Contract shall be interpreted in the following order of priority:

a) Contract Agreement;

b) Bid Data Sheet;

c) Instructions to Bidders;

d) Addenda to the Bidding Documents;

e) Special Conditions of Contract;

f) General Conditions of Contract;

g) Specifications;

h) Bill of Quantities; and

i) Drawings.

3) Governing Language and Law

3.1 This Contract shall be interpreted in accordance with the laws of the Republic of the Philippines.

3.2 This Contract has been executed in the English language, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract. All correspondence and other documents pertaining to this Contract which are exchanged by the parties shall be written in English.

4) Communications

Communications between parties that are referred to in the Conditions shall be effective only if made in writing. A notice shall be effective only when it is received by the concerned party.

5) Possession of Site

5.1 On the date specified in the **SCC**, the Procuring Entity shall grant the Contractor possession of so much of the Site as may be required to enable it to proceed with the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

5.2 If possession of a portion is not given by the date stated in the **SCC** Clause 1.3, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay shall be in accordance with **GCC** Clause 44.

5.3 The Contractor shall bear all costs and charges for special or temporary right-of-way required by it in connection with access to the Site. The Contractor shall also provide at its own cost any additional facilities outside the Site required by it for purposes of the Works.

5.4 The Contractor shall allow the Procuring Entity and any person authorized by the Procuring Entity access to the Site and to any place where work in connection with this Contract is being carried out or is intended to be carried out.

6) The Contractor's Obligations

6.1 The Contractor shall carry out the Works properly and in accordance with this Contract. The Contractor shall provide all supervision, labor, Materials, Plant and Contractor's Equipment, which may be required. All Materials and Plant on Site shall be deemed to be the property of the Procuring Entity.

6.2 The Contractor shall commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program of Work submitted by the Contractor, as updated with the approval of the Procuring Entity, and complete them by the Intended Completion Date.

6.3 The Contractor shall be responsible for the safety of all activities on the Site.

6.4 The Contractor shall carry out all instructions of the Procuring Entity that comply with the applicable laws where the Site is located.

6.5 The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the **SCC**, to carry out the supervision of the Works. The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

6.6 If the Procuring Entity asks the Contractor to remove a member of the Contractor's staff or work force, for justifiable cause, the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the Work in this Contract.

6.7 During Contract implementation, the Contractor and its subcontractors shall abide at all times by all labor laws, including child labor related enactments, and other relevant rules.

6.8 The Contractor shall submit to the Procuring Entity for consent the name and particulars of the person authorized to receive instructions on behalf of the Contractor.

6.9 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the schedule of other contractors particularly when they shall require access to the Site. The Contractor shall also provide facilities and services for them during this period. The Procuring Entity may modify the schedule of other contractors, and shall notify the Contractor of any such modification thereto.

6.10 Should anything of historical or other interest or of significant value be unexpectedly discovered on the Site, it shall be the property of the Procuring Entity. The Contractor shall notify the Procuring Entity of such discoveries and carry out the Procuring Entity's instructions in dealing with them.

7) Subcontracting

7.1 Unless otherwise indicated in the **SCC**, the Contractor shall not subcontract portions of the Works beyond the percentage specified in **BDS** Clause 8.1. If subcontracting is allowed, the arrangement, including the timing for submission of the subcontractor's eligibility documents, shall be disclosed.

7.2 For subcontracting arrangements, the following rules shall apply for both locally-funded projects and to projects financed through Official Development Assistance, except those covered by treaty, or international, or executive agreements:

a) The subcontracted portion of the contract shall be subject to the approval of the HoPE and the following conditions:

i) The subcontracted portion shall not exceed fifty percent (50%), or a different percentage on a per project basis as approved by the GPPB. The threshold percentages fixed herein shall be subject to the periodic review and adjustments as may be deemed appropriate by the GPPB; and

ii) The subcontracted portion shall be limited to components that are not deemed "significant or material" to the project as determined by the Procuring Entity.

b) Subcontracting arrangement, if allowed, including the time of submission of the eligibility documents of the subcontractor, shall be disclosed in the Bidding Documents;

c) Subcontractors must meet the eligibility criteria and shall submit the same eligibility documents as the general contractor.

Failure of a subcontractor to meet the eligibility criteria does not affect the eligibility of the general contractor for the procurement project. In such case, the portion intended to be subcontracted to the ineligible subcontractor shall be assumed by the general contractor;

d) The general contractor shall remain liable for the subcontractor's actions, defaults, delays, and negligence;

e) The general contractor and the subcontractor are obliged to comply with the provisions of the contract and shall share liability, jointly and severally, in cases of violation of safety standards or other labor standards insofar as the subcontracted portion is concerned; and

f) For purposes of post-qualification in accordance with its objective and process under the IRR, the value of the entire completed and accepted Project, including the subcontracted portion, shall be credited as experience of the general contractor. In the case of the subcontractor, the following rules shall apply:

i) The subcontractor shall get credit for one hundred percent (100%) of the value of the subcontracted portion of the project performed;

ii) Subcontractors shall be eligible to concessional windows of GFIs that treat receivables from the government as loan security; the receivables of subcontractors due from their general contractor shall similarly be accepted as loan security by GFIs; and

iii) Contract performance monitoring, such as the use of CPES, among others, shall also be mandatorily applied to the work experience of the subcontractors.

8) Advance Payment

8.1 The Procuring Entity shall make an advance payment on the Contract Price 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**.

8.2 The advance payment shall be made only upon:

i) Written request of the contractor which shall form part of the contract document; and

ii) Submission of an irrevocable standby Letter of Credit of equivalent value from a bank as confirmed by the Procuring Entity; a bank guarantee; or a surety bond callable upon demand issued by a duly licensed surety or insurance company, at the option of the Procuring Entity.

8.3 The advance payment shall be recovered from the Contractor through deductions in amounts equivalent to the percentage of the total contract price that corresponds to the value of the advance payment granted.

8.4 Once a month, Contractors may submit documents, such as Monthly Certificates,[8] to show the progress or partial completion of a project. The Contractor may reduce its standby letter of credit or guarantee instrument by the amounts refunded by the Monthly Certificates, or any equivalent document subject to auditing and accounting rules, in the advance payment.

9) Progress Payments

9.1 Once a month, the Contractor may submit a statement of work accomplished (SWA) or progress billing and corresponding request for progress payment for work accomplished. The SWA should show the amounts which the Contractor considers itself to be entitled to up to the end of the month, to cover (i) the cumulative value of the Works it executed to date, based on the items in the Bill of Quantities, and (ii) adjustments made for approved Variation Orders executed. Alternatively, the Procuring Entity may require in the Bidding Documents that the SWA or progress billing and the corresponding request for progress payment may only be submitted upon actual completion of the Infrastructure Project or a specific portion, segment, milestone or phase thereof.

The Procuring Entity or Project Engineer shall check the Contractor's SWA and certify the amount to be paid to the Contractor as progress payment. Materials and equipment delivered onsite but not yet incorporated in the Works shall not be included for payment, except as otherwise stipulated in the **SCC**.

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[8] Commission on Audit (COA) Circular 2012-001.

9.2 The Procuring Entity shall deduct the following from the certified gross amounts to be paid to the Contractor as progress payment:

a) Cumulative value of the work previously certified and paid for.

b) Portion of the advance payment to be recouped.

c) Retention money in accordance with the conditions of the contract.

d) Amount to cover third-party liabilities.

e) Amount to cover uncorrected discovered defects in the Works.

9.3 Payments shall be adjusted by deducting therefrom the amounts for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Procuring Entity within twenty-eight (28) days from the date each certificate was issued. No payment of interest for delayed payments and adjustments shall be made by the Procuring Entity.

9.4 The first progress payment may be paid by the Procuring Entity to the Contractor, as indicated in the **SCC**; Provided, That at least a percentage of the Works has been accomplished as certified by the Procuring Entity and as indicated in the **SCC**.

9.5 Items of the Works for which a price of "0" (zero) has been entered will not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

10) Payment Documents

10.1 Subject to existing accounting and auditing rules and regulations,[9] the Contractor shall submit to the Procuring Entity monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

10.2 The Procuring Entity shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

10.3 The value of Work executed shall:

a) be determined by the Procuring Entity;

b) comprise the value of the quantities of the items in the Bill of Quantities completed; and

c) include the valuations of approved variations.

10.4 The Procuring Entity may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

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[9] COA Circular No. 2012-001.

11) Retention

11.1 The Procuring Entity shall retain from each payment due to the Contractor an amount equal to a percentage thereof using the rate as specified in GCC Clause 11.2. The said amount will serve to guarantee indemnity for uncorrected discovered defects and third-party liabilities arising from this Contract. This retention money shall be utilized if the contractor fails to repair the discovered defects. Should the retention money be insufficient, the PE may forfeit the performance security, which may ultimately lead to the termination of the contract.[10]

11.2 Progress payments are subject to retention of ten percent (10%) referred to as the retention money. Such retention shall be based on the total amount due to the Contractor prior to any deduction and shall be retained from every progress payment until fifty percent (50%) of the value of the Works, as determined by the Procuring Entity, are completed.

If, after fifty percent (50%) completion, the work is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the ten percent (10%) retention shall be imposed, which may be decreased to 5 percent (5%) by the Procuring Entity based on justifiable causes.[11]

11.3 The total retention money shall be due for release upon final acceptance of the Works. The Contractor may, however, request the substitution of the retention money for each progress billing with irrevocable standby Letters of Credit from a bank, bank guarantees or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to Government; Provided, That the project is on schedule and is satisfactorily undertaken. Otherwise, the ten (10%) percent retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of the Government shall be valid for a duration to be determined by the concerned implementing office/agency or Procuring Entity and will answer for the purpose for which the ten (10%) percent retention is intended, *i.e.*, to cover uncorrected discovered defects and third party liabilities.

11.4 On completion of the whole Works, the Contractor may substitute retention money with an “on demand” Bank guarantee in a form acceptable to the Procuring Entity.

12) Performance Security

12.1 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 winning Contractor shall furnish the performance security in any of the forms prescribed in **ITB** Clause 30 in relation to **BDS** Clause 30.2 and 30.3.

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[10] Supreme Court rulings (e.g. New Bian Yek Commercial, Inc. vs. Office of the Ombudsman, et. al., GR No. 169338[2009], and Tondo Medical Center vs. Rante, G.R. No. 230645 [2019] have affirmed this purpose, stating that retention money is a form of security to ensure the satisfactory completion of works and to cover any defects or third-party claims that may arise after project completion.

[11] Section 71.2.8 of the IRR.

12.2 The performance security posted in favor of the Procuring Entity shall be forfeited in the event it is established that the Contractor is in default in any of its obligations under the contract.

12.3 The performance security shall remain valid until issuance by the Procuring Entity of the Certificate of Final Acceptance. In case the performance security issued is valid for a specific period shorter than the term of the contract, including the defects liability period, the same shall be renewed or extended as often as necessary and immediately submitted to the Procuring Entity. In case of approved contract time extensions, the Contractor shall cause the extension of the validity of the performance security to cover the said extensions.

12.4 The performance security may be released by the Procuring Entity after the issuance of the Certificate of Final Acceptance; Provided, That the Procuring Entity has no claims filed against the performance security.

12.5 The Contractor shall post an additional performance security following the amount and form specified in **ITB** Clause 30 to cover any cumulative increase of more than ten percent (10%) over the original value of the contract as a result of change orders, extra work orders and supplemental agreements, as the case may be.

12.6 In case of a reduction in the contract value or for partially completed Works under the contract which are usable and accepted by the Procuring Entity the use of which, in the judgment of the implementing agency or the Procuring Entity, will not affect the structural integrity of the entire project, the Procuring Entity shall allow a proportional reduction in the original performance security, provided that any such reduction is more than ten percent (10%) and that the aggregate of such reductions is not more than fifty percent (50%) of the original performance security.

12.7 Unless otherwise indicated in the **SCC**, the Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to Act No. 3688[12] 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.

13) Detailed Engineering and Site Investigation Reports

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

13.2 Detailed engineering shall proceed only on the basis of the feasibility or preliminary engineering study made which establishes the technical viability of the project and conformance to land use and zoning guidelines prescribed by existing laws. The findings contained in the feasibility study, if undertaken for the project, shall be examined. If, in the course of this exercise, it is found that amendments would be desirable in the design standards of principal features, as proposed, specific recommendations for such changes shall be supported

[12] Also known as "An Act for the Protection of Persons Furnishing Material and Labor for the Construction Of Public Works".

by detailed justifications, including their effects on the cost, and the economic justifications, if necessary.

13.3 A schedule of detailed engineering activities shall include the following:

a) Survey;

b) Site Investigation;

c) Soils and Foundation Investigation;

d) Construction Materials Investigation;

e) Preparation of Design Plans;

f) Preparation of Technical Specifications;

g) Preparation of Quantity and Cost Estimates;

h) Preparation of Scope of Work;

i) Preparation of Proposed Construction Schedule (and estimated Cash Flow for projects with Schedule over six (6) months;

j) Preparation of Site or Right-of-Way Plans including Schedule of Acquisition;

k) Preparation of Utility Relocation Plan;

l) Preparation and Submission of Design Report;

m) Environmental Impact Statement for critical project, as defined by the Department of Environment and Natural Resources;

n) Preparation of minimum requirements for a Construction Safety and Health Program for the project being considered;

o) Value Engineering Studies; and

p) Preparation of report on asset climate hazards, risk assessment, disaster response strategies, and readiness planning.

13.4 Work under detailed architectural and engineering design shall include, among others, the items stated in Section 8.3 of the IRR.

14) Licenses and Permits

The Procuring Entity may, if requested by the Contractor, assist him in applying for permits, licenses or approvals, which are required for the Works.

15) Contractor's Risk and Warranty Security

15.1 From the time project construction commenced up to final acceptance, the Contractor shall assume full responsibility for any damage or destruction of the works, except those occasioned by force majeure; and the safety, protection, security, and convenience of its personnel, third parties, and the public at large,

as well as the works, equipment, installation and the like to be affected by its construction work.

15.2 The defects liability period for infrastructure projects shall be one (1) year from project completion up to final acceptance by the Procuring Entity. During this period, the Contractor shall undertake the repair works, at its own expense, of any damage to the Works on account of the use of materials of inferior quality, defects in the construction, or due to any violation of the terms of the contract, within ninety (90) calendar days from the time the HoPE has issued an order to undertake repair. In case of failure or refusal to comply with this mandate, the Procuring Entity shall undertake such repair works and shall be entitled to full reimbursement of expenses incurred therein upon demand.

15.3 The defects liability period shall be covered by the performance security of the Contractor required in Section 68 of the IRR, which shall guarantee that the Contractor performs its responsibilities stated in **GCC** Clause 15.1 Unless otherwise indicated in the **SCC**, in case the Contractor fails to comply with the preceding paragraph, the Procuring Entity shall forfeit its performance security, subject its properties to attachment or garnishment proceedings, and may impose the appropriate penalty under Sections 99, 100, and 101 of the IRR. All payables of the GoP in its favor shall be offset to recover the costs.

15.4 The following persons shall be held responsible for "Structural Defects," i.e., major faults or flaws or deficiencies in one or more key structural elements of the project which may lead to structural failure of the completed elements or structure, or "Structural Failures," i.e., where one or more key structural elements in an infrastructure facility fails or collapses, thereby rendering the facility or part thereof incapable of withstanding the design loads, and/or endangering the safety of the users or the general public:

a) Contractor – Where Structural Defects or Failures arise due to faults attributable to improper construction, use of inferior quality/substandard materials, and any violation of the contract plans and specifications, the Contractor shall be held liable;

b) Consultants – Where Structural Defects or Failures arise due to faulty and/or inadequate design and specifications as well as construction supervision, then the consultant who prepared the design or undertook construction supervision for the project shall be held liable;

c) Procuring Entity's Representatives or Project Manager or Construction Managers and Supervisors – The project owner's representative, project manager, construction manager, and supervisor shall be held liable in cases where the Structural Defects or Failures are due to their willful intervention in altering the designs and other specifications; negligence or omission in not approving or acting on proposed changes to noted defects or deficiencies in the design and/or specifications and the use of substandard construction materials in the project;

d) Third Parties - Third Parties shall be held liable in cases where Structural Defects or Failures are caused by work undertaken by them such as leaking pipes, diggings or excavations, underground cables and electrical wires, underground tunnel, mining shaft and the like, in which case the applicable warranty to such structure should be levied to third parties for their construction or restoration works; and

e) Users - In cases where Structural Defects or Failures are due to abuse or misuse by the End-User or Implementing Unit of the constructed facility and/or non–compliance by a user with the technical design limits and/or intended purpose of the same, then the user concerned shall be held liable.

15.5 The warranty against Structural Defects or Failures, except those occasioned by force majeure, shall cover the period specified in the **SCC** reckoned from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. On the other hand, such warranty shall likewise be applied against non-structural defects for instances that pertain to faults or deficiencies in non-load bearing components or finishes of the Project, such as minor cracks, leaks, or defects in workmanship or materials, which do not affect the stability or safety of the structure but may impact its appearance, functionality, or usability.

15.6 To guarantee that the Contractor shall perform its responsibilities, it shall be required to post a warranty security, which shall be stated in Philippine Peso, in the form chosen by the Procuring Entity in accordance with the following schedule:

Form of Warranty	**Amount of Warranty Security Not less than the Percentage (%) of Total Contract Price**
(a) Cash or letter of credit issued by bank; Provided, however, that the letter of credit shall be confirmed or authenticated by a local bank, if issued by a foreign bank. For biddings conducted by LGUs, the Letter of Credit may be issued by other banks certified by the BSP as authorized to issue such financial instrument.	Five Percent (5%)
(b) Bank guarantee confirmed by bank. For biddings conducted by LGUs, the bank draft/guarantee may be issued by other banks certified by the BSP as authorized to issue such financial instrument.	Ten Percent (10%)
(c) Surety bond callable upon demand issued by GSIS or any surety or insurance company duly certified by the Insurance Commission	Thirty Percent (30%)

15.7 The warranty security shall be stated in Philippine Peso and shall remain effective within one (1) year from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity, and returned only after the lapse of the said one (1) year period. This one (1) year period shall cover both structural and non-structural defects or failures; Provided, That in cases of structural defects or failures, warranties beyond the one (1) year period shall be subject to applicable laws, rules, and regulations such as the New Civil Code of the Philippines.

15.8 In case of structural/non-structural defects or failure occurring during the applicable warranty period provided in **GCC** Clause 15.5, the Procuring Entity shall undertake the necessary restoration or reconstruction works and shall be entitled to full reimbursement by the parties found to be liable for expenses incurred therein upon demand, without prejudice to the imposition of administrative sanctions as prescribed by RA No. 12009 and without prejudice to the imposition of civil and criminal sanctions as provided under applicable laws against the responsible persons as well as the forfeiture of the warranty security posted in favor of the Procuring Entity.

16) Procuring Entity's Risk

16.1 From the Start Date until the Certificate of Final Acceptance has been issued, the following are risks of the Procuring Entity:

a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to:

i) any type of use or occupation of the Site authorized by the Procuring Entity after the official acceptance of the Works; or

ii) negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed or contracted by it, except the Contractor.

b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

17) Insurance

17.1 The Contractor shall, under its name and at its own expense, obtain and maintain, for the duration of this Contract, the following insurance coverage:

a) Contractor's All Risk Insurance, with an exception for Simple Infrastructure Projects, as applicable;

b) Transportation to the project Site of Equipment, Machinery, and Supplies owned by the Contractor;

c) Personal injury or death of Contractor's employees; and

d) Comprehensive insurance for third party liability to Contractor's direct or indirect act or omission causing damage to third persons.

17.2 The Contractor shall provide evidence to the Procuring Entity that the insurances required under this Contract have been effected and shall, within a reasonable time, provide copies of the insurance policies to the Procuring Entity.

17.3 The Contractor shall notify the insurers of changes in the nature, extent, or program for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of this Contract and shall

produce to the Procuring Entity the insurance policies in force including the receipts for payment of the current premiums.

The above insurance policies shall be obtained from any reputable insurance company approved by the Procuring Entity.

17.4 If the Contractor fails to obtain and keep in force the insurances referred to herein or any other insurance required to be obtained under the terms of this Contract, the Procuring Entity may obtain and keep in force any such insurances and pay such premiums as may be necessary for the purpose. From time to time, the Procuring Entity may deduct the amount it shall pay for said premiums including twenty five percent (25%) therein from any monies due, or which may become due, to the Contractor, without prejudice to the Procuring Entity exercising its right to impose other sanctions against the Contractor pursuant to the provisions of this Contract.

17.5 In the event the Contractor fails to observe the above safeguards, the Procuring Entity may, at the Contractor's expense, take whatever measure is deemed necessary for its protection and that of the Contractor's personnel and third parties, and/or order the interruption of dangerous Works. In addition, the Procuring Entity may refuse to make the payments under **GCC** Clause 9 until the Contractor complies with this Clause.

17.6 The Contractor shall immediately replace the insurance policy obtained as required in this Contract, without need of the Procuring Entity's demand, with a new policy issued by a new insurance company acceptable to the Procuring Entity for any of the following grounds:

a) The issuer of the insurance policy to be replaced has:

i) become bankrupt;

ii) been placed under receivership or under a management committee;

iii) been sued for suspension of payment;

iv) been suspended by the Insurance Commission and its license to engage in business or its authority to issue insurance policies has been cancelled; or

v) Where reasonable grounds exist that the insurer may not be able, fully and promptly, to fulfill its obligation under the insurance policy.

18) Liquidated Damages

18.1 When the Contractor fails to satisfactorily complete the Works under the contract within the specified contract duration, inclusive of duly granted time extensions, if any, the Contractor shall be liable for liquidated damages in an amount equal to at least one-tenth (1/10) of one percent (1%) of the cost of the unperformed portion of the Works for every day of delay.

18.2 In computing liquidated damages, the Procuring Entity shall determine the usability of the project. A project or a portion thereof may be deemed usable

when it starts to provide the desired benefits as certified by the End-User or Implementing Unit and approved by the HoPE.

18.3 To be entitled to liquidated damages, the Procuring Entity does not have to prove that it has incurred actual damages. Such amount shall be deducted from any money due, or which may become due the Contractor under the contract, collected from the retention money or other securities posted by the Contractor, or a combination thereof, whichever is convenient to the Procuring Entity.

18.4 In case the total sum of liquidated damages reaches ten percent (10%) of the total contract price, the Procuring Entity may rescind or terminate the contract, without prejudice to other courses of action and remedies available under the circumstances.

18.5 If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Entity shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment schedule.

19) Settlement of Disputes

19.1 Any dispute arising from the implementation of a contract covered by the Act and the IRR shall primarily be resolved and settled amicably by mutual consultation or agreement.

19.2 In case of failure to settle the dispute amicably, the parties may mutually agree in writing to resort to other modes of alternative dispute resolution (ADR) to promote efficiency in the procurement process. Accordingly, they are encouraged to select the most expeditious mode of ADR available.

If arbitration is chosen as the ADR method, this shall be incorporated as a provision in the contract and referred to the Arbitrator specified in the **SCC.**

19.3 If the dispute remains unresolved after exhausting the remedies provided above, it may be submitted to other forms of ADR, such as mediation, conciliation, early neutral evaluation, mini-trial, or any combination thereof, in accordance with RA No. 9285, otherwise known as the "Alternative Dispute Resolution Act of 2004". However, disputes that are within the competence or jurisdiction of the Construction Industry Arbitration Commission shall be referred to the same for resolution.[13]

20) 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.

21) Termination for Breach of Contract

21.1 The Procuring Entity shall terminate the contract for breach thereof when any of the following conditions are present:

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[13] Executive Order No. 1008 (Construction Industry Arbitration Law); and Construction Industry Arbitration Commission Revised Rules of Procedure.

a) Due to the Contractor's fault and while the project is on-going, it has incurred negative slippage of fifteen percent (15%) or more in accordance with Presidential Decree No. 1870, s. 1983;

b) Due to the Contractor's fault and after the contract time has expired, it has incurred a negative slippage of ten percent (10%) or more in the completion of the work;

c) The Contractor abandons the contract works, plainly demonstrates an intention not to continue the performance of the Contractor's obligations under the contract, refuses or fails to comply with the Procuring Entity's instructions, or fails to proceed expeditiously and without delay despite a written notice by the Procuring Entity;

d) When the Contractor, without reasonable excuse, fails to comply with the Notice of Rejection given by the Project Engineer that, after examination therein, the Infrastructure Project is found to be defective or otherwise not in accordance with the Contract, or a Project Engineer's instruction to conduct remedial work, within 30 days after receiving the said notice;

e) The Contractor does not actually have on the project site the minimum essential equipment listed on the Bid necessary to prosecute the Works in accordance with the approved work plan and equipment deployment schedule as required for the project;

f) The Contractor does not execute the Works in accordance with the contract or persistently or flagrantly neglects to carry out its obligations under the contract;

g) The Contractor neglects or refuses to remove materials or to perform a new work that has been rejected as defective or unsuitable;

h) The Contractor subcontracts any part of the contract works without approval by the Procuring Entity; or

i) The Contractor becomes bankrupt or insolvent; goes into liquidation, administration, reorganization, winding-up, or dissolution; becomes subject to the appointment of a liquidator, receiver, administrator, manager, or trustee; enters into a composition or arrangement with the Contractor's creditors; or any act is done or any event occurs which is analogous to or has a similar effect to any of these acts or events under applicable laws.

21.2 All materials on the Site, Plant, Works, including Equipment paid under this Contract, including those identified by the Procuring Entity in the **SCC** pursuant to GCC Clause 9.1, shall be deemed to be the property of the Procuring Entity if this Contract is terminated because of the Contractor's breach.

22) Termination Due to Force Majeure

22.1 For purposes of this Contract the terms "*force majeure*" and "fortuitous event" may be used interchangeably. In this regard, a fortuitous event or *force majeure* shall be interpreted to mean an event which could not have been foreseen, or though foreseen, was inevitable. It shall not include ordinary

unfavorable weather conditions, and any other cause the effects of which could have been avoided with the exercise of reasonable diligence by the Contractor.

22.2 If this Contract is discontinued by an outbreak of war or by any other similar event entirely outside the control of either the Procuring Entity or the Contractor, the Procuring Entity shall certify that this Contract has been discontinued. The Contractor shall make the Site safe and stop work as quickly as possible after receiving the certificate and shall be paid for all Works carried out before receiving it and for any Work carried out afterwards to which a commitment was made by the Procuring Entity.

22.3 If the event continues for a period of eighty-four (84) days, either party may then give notice of termination, which shall take effect twenty-eight (28) days after the giving of the notice.

22.4 After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the materials and Plant, in relation to GCC Clause 9.1 and 21.2, adjusted by the following:

(a) any sum to which the Contractor is entitled under **GCC** Clause 30; and

(b) any sum to which the Procuring Entity is entitled.

22.5 The net balance due shall be paid or repaid within a reasonable time period from the time of the notice of termination.

23) Termination by Contractor

The Contractor may terminate this Contract with the Procuring Entity if the Works are completely stopped for a continuous period of at least sixty (60) calendar days through no fault of its own, due to any of the following reasons:

a) Failure of the Procuring Entity to deliver, within a reasonable time, supplies, materials, right-of-way, or other items it is obligated to furnish under the terms of this Contract;

b) Substantial failure of the Procuring Entity to perform its obligations under the contract, and such failure constitutes a material breach of the Procuring Entity's obligations under the contract;

c) Prolonged suspension by the Procuring Entity, through no fault of the Contractor, which affects the substantial part of the Infrastructure Project; or

d) The prosecution of the Work is disrupted by the adverse peace and order situation, as certified by the Armed Forces of the Philippines Provincial Commander and approved by the Secretary of National Defense.

24) Termination for Convenience

The Procuring Entity, by notice sent to the Contractor, may terminate the Contract, in whole or in part, at any time, if it has determined the existence of any of the following conditions that make contract implementation economically, financially, or technically impractical or unnecessary:

a) If physical and economic conditions have significantly changed so as to render the project no longer economically, financially, or technically feasible, as determined by the HoPE; or

b) The HoPE has determined the existence of conditions that make project implementation impractical or unnecessary, such as, but not limited to, fortuitous events, changes in laws and government policies.

25) Termination for Unlawful Acts

The Procuring Entity may terminate the contract in case it is determined prima facie that the Contractor, including any joint venture partner therein, has engaged, before or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation. These unlawful acts include, but are not limited to, the following:

a) Corrupt, fraudulent, collusive, coercive, and obstructive practices as defined in **ITB** Clause 3.1, unless otherwise specified in the **SCC**;

b) Drawing up or using forged documents;

c) Using adulterated materials, means, or methods, or engaging in production contrary to rules of science or trade; or

d) Any other act analogous to the foregoing.

26) Termination for Other Causes

26.1 The Procuring Entity may terminate this Contract, in whole or in part, at any time for its convenience. The HoPE may terminate this Contract for the convenience of the Procuring Entity if physical and economic conditions have significantly changed so as to render the project no longer economically, financially, or technically feasible, as determined by the HoPE; or if the HoPE has determined the existence of conditions that make project implementation impractical or unnecessary, such as, but not limited to, fortuitous events, changes in laws and government policies.

26.2 The Procuring Entity or the Contractor may terminate this Contract if the other party causes a fundamental breach of this Contract.

26.3 Other breaches of Contract shall include, but shall not be limited to, the following:

a) The Contractor stops work for twenty-eight (28) days when no stoppage of work is shown on the current Program of Work and the stoppage has not been authorized by the Procuring Entity;

b) The Procuring Entity instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within twenty-eight (28) days;

c) A payment certified by the Procuring Entity is not paid to the Contractor within eighty-four (84) days from the date of the Procuring Entity's certificate;

d) The Procuring Entity gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Procuring Entity;

e) The Contractor does not maintain a Security, which is required; and

f) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the **GCC** 18.

26.4 The Funding Source or the Procuring Entity, as appropriate, will seek the imposition of administrative sanctions as prescribed by RA No. 12009 and without prejudice to the imposition of civil and criminal sanctions as provided under applicable against individuals and organizations deemed to be involved with corrupt, fraudulent, or coercive practices.

26.5 When persons from either party to this Contract gives notice of a fundamental breach to the Procuring Entity in order to terminate the existing contract for a cause other than those listed under **GCC** Clause 26.3, the Procuring Entity shall decide whether the breach is fundamental or not.

26.6 If this Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

27) Procedures for Termination of Contracts

27.1 The following provisions shall govern the procedures for the termination of this Contract:

a) **Verification** - Upon receipt of a written report of acts or causes which may constitute grounds for termination as aforementioned, or upon its own initiative, the End-User or Implementing Unit shall, within a period of seven (7) calendar days, verify the existence of such grounds and cause the execution of a Verified Report, with all relevant evidence attached;

b) **Notice to Terminate** - Upon recommendation by the End-User or Implementing Unit, the HoPE shall terminate contracts only by written notice to the Contractor conveying the termination of the contract. The notice shall state:

(i) that the Contract is being terminated for any of the grounds aforementioned, and a statement of the acts that constitute the grounds constituting the same;

(ii) the extent of termination, whether in whole or in part;

(iii) an instruction to the Contractor to show cause as to why this contract should not be terminated; and

(iv) special instructions of the Procuring Entity, if any.

The Notice to Terminate shall be accompanied by a copy of the Verified Report;

c) **Show Cause** - Within a period of seven (7) calendar days from receipt of the Notice of Termination, the Contractor shall submit to the HoPE a verified position paper stating why the contract should not be terminated. If the Contractor fails to show cause after the lapse of the seven (7) day period, either by inaction or by default, the HoPE shall issue an order terminating the contract;

d) **Rescission of Notice of Termination** - The Procuring Entity may, at any time before receipt of the Contractor's verified position paper, withdraw the Notice to Terminate if it is determined that certain items or works subject of the notice had been completed, delivered, or performed before the Contractor's receipt of the notice;

e) **Decision** - Within a non-extendible period of ten (10) calendar days from receipt of the verified position paper, the HoPE shall decide whether or not to terminate the contract. It shall serve a written notice to the Contractor of its decision and, unless otherwise provided, the contract is deemed terminated from receipt of the Contractor of the notice of the decision. The termination shall only be based on the grounds stated in the Notice to Terminate.

f) **Contract Termination Review Committee (CTRC)** - The HoPE may create a committee to assist him in the discharge of its functions under the IRR. All decisions recommended by the CTRC shall be subject to the approval of the HoPE

g) **Take-over of Contracts** - If a Procuring Entity terminates the contract due to default, insolvency, or for cause, it may enter into a Negotiated Procurement (Take-over of Contracts) pursuant to Section 35.3 of the IRR.

h) **Notice by Contractor** - The Contractor must serve a written notice to the Procuring Entity of its intention to terminate the contract at least thirty (30) calendar days before its intended termination. The contract is deemed terminated if it is not resumed in thirty (30) calendar days after the receipt of such notice by the Procuring Entity.

27.2 Notwithstanding Section 99 of RA No. 12009 and as provided by applicable laws, the Procuring Entity shall impose on Contractors after the termination of the contract, the penalty of suspension for one (1) year for the first offense, suspension for two (2) years for the second offense from participating in the public bidding process, for violations committed during the contract implementation stage, as stated in the **SCC.**

28) Approval of Drawings and Temporary Works by the Procuring Entity

28.1 All Drawings prepared by the Contractor for the execution of the Temporary Works, are subject to prior approval by the Procuring Entity before its use.

28.2 The Contractor shall be responsible for design of Temporary Works.

28.3 The Procuring Entity's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

28.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, when required by the Procuring Entity.

29) Acceleration and Delays Ordered by the Procuring Entity

29.1 When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Procuring Entity will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date will be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.

29.2 If the Contractor's Financial Proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

30) Contractor's Right to Claim

If the Contractor incurs cost as a result of any of the events under **GCC** Clauses 22, 23 and 24 in relation to **GCC** Clause 20, the Contractor shall be entitled to the amount of such cost. If as a result of any of the said events, it is necessary to change the Works, this shall be dealt with as a Variation.

31) Dayworks

31.1 Subject to **GCC** Clause 40 on Variation Order, and if applicable as indicated in the **SCC**, the Contractor shall determine the Dayworks rates to be included or indicated in the Bid. The Dayworks rates in the Contractor's bid shall be used for small additional amounts of work only when the Procuring Entity has given written instructions in advance for additional work to be paid for in that way.

31.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Procuring Entity. Each completed form shall be verified and signed by the Procuring Entity within two (2) days of the work being done.

31.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms from both the Procuring Entity and Contractor.

32) Early Warning

32.1 The Contractor shall warn the Procuring Entity at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works.

32.2 The Contractor shall cooperate with the Procuring Entity in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Procuring Entity. Should such events or circumstances arise which increase the Contract price or delay the execution of Works, the provisions on variation order shall apply.

33) Program of Work

33.1 Within the time stated in the **SCC**, the Contractor shall submit to the Procuring Entity for approval a Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works.

33.2 An update of the Program of Work shall show the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

33.3 The Contractor shall submit to the Procuring Entity 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 may withhold the amount stated in the **SCC** from the next payment schedule and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

33.4 The Procuring Entity's approval of the Program of Work shall not alter the Contractor's obligations. A revised Program of Work produced by the Contactor shall show the effect of any approved Variations, and shall include all Variations. The Contractor may revise the Program of Work, based on the Variation Order, and submit it to the Procuring Entity again.

33.5 When the Program of Work is updated, the Contractor shall provide the Procuring Entity with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

34) Management Conferences

34.1 Either the Procuring Entity or the Contractor may require the other to attend a Management Conference. The Management Conference shall review the plans for remaining work and deal with matters raised in accordance with the early warning procedure.

34.2 The Procuring Entity shall record the business of Management Conferences and provide copies of the record to those attending the Conference and to the Procuring Entity. The responsibility of the parties for the actions to be taken shall be decided by the Procuring Entity either at the Management Conference or after the Management Conference. The Procuring Entity shall communicate these responsibilities in writing to all who attended the Conference.

35) Bill of Quantities

35.1 The Bill of Quantities shall contain items of work for the construction, installation, testing, commissioning of work, materials, and labor among others, to be done by the Contractor.

35.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

35.3 If the final quantity of any work item completed differs from the quantity indicated in the Bill of Quantities, and the difference does not exceed twenty-five percent (25%) of the original quantity for that item, the Procuring Entity shall adjust the Contract accordingly.

This shall be allowed only if the total amount of all such changes does not go beyond ten percent (10%) of the total Contract price, subject to applicable laws, rules, and regulations.

35.4 If requested by the Procuring Entity, the Contractor shall provide the Procuring Entity with a detailed cost breakdown of any rate in the Bill of Quantities.

36) Instructions, Inspections and Audits

36.1 The Procuring Entity shall at all reasonable times during construction of the Works be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of the construction.

36.2 If the Procuring Entity instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a defect and the test shows that it does, the Contractor shall pay for the test and any samples. In the absence of any defect, the test shall be a compensation event with no adverse consequences to the contractor.

36.3 The Contractor shall permit the Funding Source named in the **SCC** to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Funding Source, if so required by the Funding Source.

37) Identifying Defects

The Procuring Entity shall check the Contractor's work and notify the Contractor of any defects that are found. Such checking shall not affect the Contractor's responsibilities. The Procuring Entity may instruct the Contractor to check noted defects and test any work that the Procuring Entity considers as substandard and/or defective.

38) Correction of Defects

38.1 The Procuring Entity shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which is one (1) year from project completion up to final acceptance by the Procuring Entity.

38.2 Every time notice of a defect is given, the Contractor shall correct the notified defect within ninety (90) calendar days from the time the HoPE has issued an order to undertake repair.

38.3 The Contractor shall correct the defects which they notice themselves before the end of the Defects Liability Period.

38.4 The Procuring Entity shall certify that all defects have been duly corrected.

39) Uncorrected Defects

39.1 The Procuring Entity shall give the Contractor at least fourteen (14) days' notice of its intention to use a third party to correct a Defect. If the Contractor does not correct the Defect himself within the period, the Procuring Entity may have the Defect corrected by the third party. The cost of the correction will be deducted from the Contract Price.

39.2 The use of a third party to correct defects that are uncorrected by the Contractor will in no way relieve the Contractor of its liabilities and warranties under the Contract.

40) Variation Orders

40.1 Variation Orders may be issued by the Procuring Entity to cover any increase or decrease in quantities, including the introduction of new work items that are not included in the original contract or reclassification of work items that are either due to change of plans, design or alignment to suit actual field conditions resulting in disparity between the preconstruction plans used for purposes of bidding and the "as staked plans" or construction drawings prepared after a joint survey by the Contractor and the Government after award of the contract.

Provided, That in case of positive or additive Variation Order/s, the cumulative amount thereof shall not exceed ten percent (10%) of the original contract price; Provided, further, That the scope of works shall not be reduced as to accommodate a positive Variation Order. In all cases, the addition of works under Variation Orders should be within the general scope of the project as bid and awarded.

40.2 Any cumulative positive Variation Order beyond ten percent (10%) of the original contract price shall be the subject of another procurement project to be bid out if the Works are separable from the original contract. In exceptional cases where it is urgently necessary to complete the original scope of work, the HoPE, upon the recommendation of the End-User or Implementing Unit, may authorize positive Variation Order/s resulting to a cumulative value of the positive Variation Orders beyond ten percent (10%) but not more than twenty percent (20%) of the original contract price.

All progress payments shall first be charged against the advance payment until the latter has been fully exhausted, at the option of the Procuring Entity.

40.3 A Variation Order may either be in the form of a Change Order or Extra Work Order:

a) A Change Order may be issued by the HoPE or duly authorized representative to cover any increase or decrease in quantities of original work items in the contract.

b) An Extra Work Order may be issued by the implementing official to cover the introduction of new work necessary for the completion, improvement or protection of the project which was not included as items of work in the original contract, such as, where there are subsurface or latent physical conditions at the site differing materially from those indicated in the contract, or where there are duly unknown physical conditions at the site of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work or character provided for in the contract.

40.4 For Variation Orders, the Contractor shall be paid for additional work items whose unit prices shall be derived based on the following:

a) For additional or extra works duly covered by Change Orders involving work items which are exactly the same or similar to those in the original contract, the applicable unit prices of work items original contract shall be used.

b) For additional or extra works duly covered by Extra Work Orders involving new work items that are not in the original contract, the unit prices of the new work items shall be based on the direct unit costs used in the original contract (e.g., unit cost of cement, rebars, form lumber, labor rate, equipment rental, etc.). All new components of the new work item shall be fixed prices; Provided, The same is acceptable to both the Government and the Contractor; Provided further, That the direct unit costs of new components shall be based on the Contractor's estimate as validated by the Procuring Entity concerned via documented canvass in accordance with existing rules and regulations. The direct cost of the new work item shall then be combined with the mark-up factor (i.e., taxes and profit) used by the Contractor in its bid to determine the unit price of the new work item.

40.5 Under no circumstances shall a Contractor proceed to commence work under any Change Order or Extra Work Order unless it has been approved by the HoPE or its duly authorized representative. However, under any of the following conditions, the Procuring Entity's representative or Project Engineer may, subject to the availability of funds and within the limits of its delegated authority, allow the immediate start of work under any Change Order or Extra Work Order:

a) In the event of an emergency where the prosecution of the work is urgent to avoid detriment to public service, or damage to life and/or property; and/or

b) When time is of the essence;

Provided, however, That such approval is valid on work done up to the point where the cumulative increase in value of work on the project which has not yet been duly fully approved does not exceed five percent (5%) of the adjusted original contract price.

Provided, further, That immediately after the start of work, the corresponding Change Order or Extra Work Order shall be prepared and submitted for approval in accordance with the abovementioned rules. Payments for Works satisfactorily accomplished on any Change Order or Extra Work Order may be made only after approval of the same by the HoPE or its duly authorized representative.

Provided, finally, That for a Change Order or Extra Work Order involving a cumulative amount exceeding five percent (5%) of the original contract price, no work thereon may be commenced unless said Change Order or Extra Work Order has been approved by the HoPE or its duly authorized representative.

41) Contract Completion

Once the project reaches an accomplishment of ninety-five percent (95%) of the total contract amount, the Procuring Entity may constitute an inspectorate team to conduct preliminary inspection and submit a punch-list to the Contractor in preparation for the final turnover of the project. Said punch-list will contain, among others, the remaining Works, Work deficiencies for necessary corrections, and the specific duration/time to fully complete the project within the approved remaining contract time. This, however, shall not preclude the claim of the Procuring Entity for liquidated damages, if applicable.

42) Suspension of Work

42.1 The Procuring Entity shall have the authority to suspend the work wholly or partly by written order for such period as may be deemed necessary, due to *force majeure* or any fortuitous event or for failure on the part of the Contractor to correct bad conditions which are unsafe for workers or for the general public, to carry out valid orders given by the Procuring Entity or to perform any provisions of the contract, or due to adjustment of plans to suit field conditions as found necessary during construction. The Contractor shall immediately comply with such order to suspend the work wholly or partly.

42.2 The Contractor or its duly authorized representative shall have the right to suspend work operation on any or all projects or activities along the critical path of activities after fifteen (15) calendar days from date of receipt of written notice from the Contractor to the district engineer, regional director, consultant or equivalent official, as the case may be, due to the following:

a) There exist right-of-way problems which prohibit the Contractor from performing work in accordance with the approved construction schedule.

b) Requisite construction plans which must be owner furnished are not issued to the Contractor precluding any work called for by such plans.

c) Peace and order conditions that make it extremely dangerous, if not possible, to work. However, this condition must be certified in writing by the Philippine National Police station which has responsibility over the affected area and confirmed by the Department of the Interior and Local Government (DILG) Regional Director.

d) There was a failure on the part of the Procuring Entity to deliver government-furnished materials and equipment as stipulated in the contract.

e) Delay in the payment of Contractor's claim for progress billing beyond forty-five (45) calendar days from the time the Contractor's claim has been certified by the Procuring Entity's authorized representative that the documents are complete, unless there are justifiable reasons for the delay in payment which shall be communicated in writing to the Contractor.

42.3 In case of total suspension, or suspension of activities along the critical path, which is not due to any fault of the Contractor, the elapsed time between the effectivity of the order suspending operation and the order to resume work shall be allowed to the Contractor by adjusting the contract time accordingly.

43) Payment on Termination

43.1 If the Contract is terminated because of a breach of Contract by the Contractor, the Procuring Entity shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate, and less the percentage to apply to the value of the work not completed, as indicated in the **SCC**. Additional liquidated damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment

due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

43.2 If the Contract is terminated for the Procuring Entity's convenience, or due to a breach of Contract by the Procuring Entity, the Procuring Entity shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

43.3 The net balance due shall be paid or repaid within twenty-eight (28) days from the notice of termination.

43.4 If the Contractor has terminated the Contract under **GCC** Clauses 23 to 24, the Procuring Entity shall promptly return the Performance Security to the Contractor.

44) Extension of Contract Time

44.1 Should the amount of additional work or other special circumstances warrant the entitlement of the Contractor to an extension of contract time, the Procuring Entity shall determine the amount of such extension; Provided, That the Contractor has notified the Procuring Entity of its claim for extension of contract time prior to the expiration of the contract time, and within thirty (30) calendar days after the additional work has been commenced or the circumstances leading to such claim have arisen, as the case may be, in order to give the Procuring Entity the opportunity to investigate the claim. Failure to provide such notice shall constitute a waiver of such a claim by the Contractor. Upon receipt of full and detailed particulars, the Procuring Entity shall examine the facts and extent of the delay and shall extend the contract time to complete the contract work when, in the Procuring Entity's opinion, the findings of facts justify an extension.

44.2 No extension of contract time shall be granted to the Contractor due to ordinary unfavorable weather conditions and inexcusable negligence of the Contractor to provide the required equipment, supplies, or materials.

44.3 Extension of contract time may be granted only when the affected activities fall within the critical path of the PERT, CPM, Precedence Diagram Method or any other project management tool.

44.4 No extension of contract time shall be granted when the reason given to support the request for extension was already considered in the determination of the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection.

44.5 Extension of contract time may be granted in the cases indicated in the **SCC.**

44.6 The written consent of the bank, or surety or insurance company, as the case may be, must be attached to any request of the Contractor for extension of contract time and submitted to the Procuring Entity for consideration and the validity of the Performance Security shall be correspondingly extended.

44.7 The Procuring Entity shall extend the Intended Completion Date if a Variation is issued which makes it impossible for the Intended Completion Date to be achieved by the Contractor without taking steps to accelerate the remaining work, which would cause the Contractor to incur additional costs. No payment shall be made for any event which may warrant the extension of the Intended Completion Date.

44.8 The Procuring Entity shall decide whether and by how much to extend the Intended Completion Date within twenty (20) days of the Contractor asking the Procuring Entity for a decision thereto after fully submitting all supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

45) Price Escalation

In the event of an extraordinary increase in prices of specific components of the Infrastructure Project, price escalation may be considered, subject to prior approval of the GPPB. If the cost of construction components increases by more than ten percent (10%) of the unit price of work items, as determined against the prevailing price indices of the PSA, a price escalation may be authorized at a no-loss, no-gain basis, using the appropriate formula prescribed by the GPPB. For the purpose of this Section, the PSA shall ensure that its price indices are region-specific and updated on a monthly basis

46) Completion

The Contractor shall request the Procuring Entity to issue a Certificate of Completion of the Works, and the Procuring Entity will do so upon determining that the work is completed.

47) Taking Over

The Procuring Entity shall take over the Site and the Works within seven (7) days from the date of issuance of a Certificate of Completion; Provided, That it shall not release the Contractor of its responsibilities within the defects liability period.

48) Operating and Maintenance Manuals

48.1 If “as built” Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the **SCC**.

48.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the **SCC**, or they do not receive the Procuring Entity’s approval, the Procuring Entity shall 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.

The provisions of this Section 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 Section IV. General Conditions of Contract must be incorporated.

b) Amendments and/or supplements to provisions of Section IV. General Conditions of Contract, as necessitated by the circumstances of the specific project, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of Section IV. General Conditions of Contract should be incorporated herein.

Special Conditions of Contract

<table>
<tr><td>GCC Clause</td><td></td></tr>
<tr><td>1.1</td><td>The Intended Completion Date is Ninety (90) Calendar days upon issuance of the Notice to Proceed (NTP).

NOTE: The contract duration shall be reckoned from the start date and not from contract effectivity date.</td></tr>
<tr><td>1.2</td><td>The Procuring Entity is National Irrigation Administration - Magat River Integrated Irrigation System Head Office.</td></tr>
<tr><td>1.3</td><td>The Site is located at Namnama, Cabatuan, Isabela.</td></tr>
<tr><td>1.4</td><td>The Start Date is upon issuance of the Notice to Proceed (NTP).

NOTE: The start date shall be the date of receipt of the Notice to Proceed.</td></tr>
<tr><td>1.5</td><td>The Works consist of CONSTRUCTION OF SLOPE PROTECTION STRUCTURE.</td></tr>
<tr><td>2.2</td><td>If different dates are specified for completion of the Works by section (“sectional completion”), these dates should be listed here</td></tr>
<tr><td>5.1</td><td>The Procuring Entity shall give possession of all parts of the Site to the Contractor upon the issuance of the Notice to Proceed (NTP).</td></tr>
<tr><td>6.5</td><td>The Contractor shall employ the following Key Personnel:
<table>
<tr><th>Key Personnel</th><th>General Experience</th><th>Relevant Experience</th></tr>
<tr><td>1 Project Manager</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Project Engineer</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Materials Engineer</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Safety Officer 3 (SO3)</td><td>Construction Jobs</td><td>at least 3-years experience</td></tr>
<tr><td>1 Foreman</td><td>Construction Jobs</td><td>at least 1-year experience</td></tr>
</table></td></tr>
<tr><td>7.1</td><td>No further instructions.</td></tr>
<tr><td>8.1</td><td>The amount of the advance payment is 15% of the Contract Price may be given in two equal payments.</td></tr>
<tr><td>9.1</td><td>For the supply and delivery of items with installation, payments can be made provided the latter works have been simultaneously accomplished. On the other hand, in cases where the contractor has requested progress billing for the supply and delivery of items without installation, the payment that corresponds with the contractor’s actual accomplishment is allowed and must be verified and approved by the Department Manager A or his authorized representative.</td></tr>
<tr><td>9.4</td><td>[Choose one and delete the other]</td></tr>
</table>

	All progress payments shall first be charged against the advance payment until the latter has been fully exhausted, at the option of the Procuring Entity. Or 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 first progress payment may be paid by the Procuring Entity to the Contractor; Provided, That at least *[insert percentage]* of the Works has been accomplished as certified by the Procuring Entity.
12.7	No further instructions.
13.1	None
15.3	No further instructions.
15.5	*In case of semi-permanent structures, such as buildings of types 1, 2, and 3 as classified under the National Building Code of the Philippines, concrete or asphalt roads, concrete river control, drainage, irrigation lined canals, river landing, deep wells, rock causeway, pedestrian overpass, and other similar semi-permanent structures:* Five (5) years.
20	*"*No additional provision.*"*
25(a)	No further instructions.
27.2	a) Failure of the Contractor, due solely to its fault or negligence, to mobilize and start work or performance within the specified period in the Notice to Proceed ("NTP"); b) Failure by the Contractor to fully and faithfully comply with its contractual obligations without valid cause, or failure by the Contractor to comply with any written lawful instruction of the Procuring Entity or its representative(s) pursuant to the implementation of the contract. For the procurement of infrastructure projects or consultancy contracts, lawful instructions include but are not limited *to* the following: i) Employment of competent technical personnel, competent engineers and/or work supervisors; ii) Provision of warning signs and barricades in accordance with approved plans and specifications and contract provisions; iii) Stockpiling in proper places of all materials and removal from the project site of waste and excess materials**,** including broken pavement and excavated debris in accordance with approved plans and specifications and contract provisions; iv) Deployment of committed equipment, facilities, support staff and manpower; and

	v) Renewal of the effectivity dates of the performance security after its expiration during the course of contract implementation. c) Assignment and subcontracting of the contract or any part thereof or substitution of key personnel named in the proposal without prior written approval by the Procuring Entity. d) Poor performance by the Contractor or unsatisfactory quality and/or progress of work arising from its fault or negligence as reflected in the CPES rating sheet. In the absence of the CPES rating sheet, the existing performance monitoring system of the Procuring Entity shall be applied. Any of the following acts by the Contractor shall be construed as poor performance: i) Negative slippage of fifteen (15%) and above within the critical path of the project due entirely to the fault or negligence of the Contractor; and ii) Quality of materials and workmanship not complying with the approved specifications arising from the Contractor's fault or negligence. e) Willful or deliberate abandonment or non-performance of the project or contract by the Contractor resulting to substantial breach thereof without lawful and/or just cause. In addition to the penalty of suspension, the performance security posted by the Contractor shall also be forfeited.
31.1	No dayworks are applicable to the contract.
33.1	The Contractor shall submit the Program of Work to the Procuring Entity within *10* days of delivery from the Notice of Award.
36.3	The Funding Source is the *Government of the Philippines.*

44.5	a) rainy/unworkable days considered unfavorable for the prosecution of the Works at the site, based on the actual conditions obtained at the site, in excess of the number of rainy/unworkable days pre-determined by the Procuring Entity in relation to the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection, and/or b) major calamities such as exceptionally destructive typhoons, floods and earthquakes, and epidemics, c) delays attributable to the Procuring Entity, such as non-delivery on time of materials, working drawings, or written information to be furnished by the Procuring Entity, non-acquisition of permit to enter private properties or non-execution of deed of sale or donation within the right-of-way resulting in complete paralyzation of construction activities, and d) other meritorious causes as determined by the Procuring Entity and approved by the HoPE such as shortage of construction materials, general labor strikes, and peace and order problems that disrupt construction operations through no fault of the Contractor may be considered as additional grounds for extension of contract time provided they are publicly felt and certified by appropriate government agencies such as DTI, DOLE, DILG, and DND, among others.
48.1	The date by which “as built” drawings are required is *upon project completion*.
48.2	The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is *1% of the contract amount.*

Section VI. Specifications

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of Competitive Bidding, Limited Source Bidding, or Competitive Dialogue, 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 PBD.

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.

Prudence must be exercised 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 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 at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's consent. In the event the Procuring Entity 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.

Section VII. Drawings

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

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).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors (refer to **GCC** Clause 7) 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 winning 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 its signature. Failure of the authorized representative to sign each and every page of the Bill of Quantities shall be a cause for rejection of its bid.

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

Section IX. Philippine Bidding Documents Related Forms

Notes to the Philippine Bidding Document Related Forms

The Bidder shall complete and submit with its Bid the **Bid Form**, together with the Bill of Quantities, detailed estimates that include a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid, and Cash Flow by Quarter, in accordance with **ITB** Clause 13, and all those requirements indicated in the Bidding Documents and the format set out in this Section.

When requested in the BDS, the Bidder should provide the **Bid Security**, either in the form included hereafter or in another form acceptable to the Procuring Entity, pursuant to **ITB** Clause 16.

The **Contract Form**, when it is finalized at the time of contract award, should incorporate any correction or modification to the accepted Bid resulting from price corrections. The needed attachments, as aforementioned which form part of the contract should be modified accordingly.

The **Omnibus Sworn Statement** must be completed by all Bidders in accordance with **ITB** Clause 4.3. Failure to do so and submit it with the Bid shall result in the rejection of the Bid and the Bidder's disqualification.

The **Performance Securing Declaration and Bank Guarantee Form for Advance Payment** shall be completed only by the successful Bidder in accordance with one of the forms indicated herein or in another form acceptable to the Procuring Entity and pursuant to **GCC** Clause 12 and its corresponding SCC provision.

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Bid Form for Procurement of Infrastructure Projects

[Note: The duly accomplished form shall be submitted with the Bid]

BID FORM

Project Identification No.: *[Insert number]*

To: [Name of Procuring Entity]

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

a) I/We have no reservation to the PBD, including the Supplemental Bid Bulletins, for the Procurement Project *[Project Title]*;

b) I/We offer to execute the Works for this Contract in accordance with the PBD;

c) The total price of our Bid in words and figures, excluding any discount offered below, is *[insert information]*

d) The discounts offered and the methodology for their application, if any, are: *[insert information*]; *or indicate N/A if no discount offered]*

e) The total bid price in words and figures, after applying the applicable discount, 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 in the Detailed Estimates.

f) This Bid shall remain valid within a period stated in the PBD, and it shall be binding upon me/us at any time before the expiration of that period;

g) If our bid is accepted, I/we commit to enter to a contract and provide a performance security in the form, amounts, and within the times prescribed in the PBD, and hereby acknowledge the consequences under the IRR of RA No. 12009 on forfeiture of Bid Security or enforcement of Bid Securing Declaration and on Blacklisting.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon the Bidder.

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

I/We certify/confirm that we comply with the eligibility requirements pursuant to the PBD.

The undersigned is authorized to submit the bid on behalf of *[Name of the Bidder]* as evidenced by the attached *[State the Written Authority]*.

I/We acknowledge that failure to sign each and every page of this Bid Form, including the attached Schedule of Prices, shall be a ground for the rejection of our bid.

Duly authorized to sign the Bid for and behalf of:

[Insert Bidder's Name]

[Signature over Printed Name]
[Position/Designation]
[Date]

Contract Form

[Note: The duly accomplished form is not required to be submitted with the Bid but shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT FOR [Insert Project Title]

THIS CONTRACT executed on the _____ day of _____ 20_____ between:

[Name of Procuring Entity], a government agency of the Republic of the Philippines, hereinafter called "the Entity";

-and-

[Name of Contractor] Filipino of legal age or a company duly organized and existing under the laws of [city and country], with principal office at [insert address], hereinafter called "the Contractor".

WHEREAS**,** the Entity invited Bids for certain goods and ancillary services, particularly *[Brief description of Project]*;

WHEREAS, the Contractor submitted a responsive bid and was awarded the contract for the procurement in the total amount of ***[****Contract price in words and figures, including currency],* hereinafter referred to as the "Contract Price."

NOW, THEREFORE, for and in consideration of the foregoing premises, the parties hereby agree as follows:

1) Unless otherwise stated, terms and expressions used in this Contract shall have the same meanings as those assigned to them in the Conditions of Contract, which form an integral part of this Contract.

2) The following documents as required by the Implementing Rules and Regulations of Republic Act No. 12009 shall be deemed to form and be read and construed as integral part of this Contract, *viz.*:

    a) Philippine Bidding Documents (PBD);

        i. Drawings/Plans;
        ii. Scope of Work;
        iii. Invitation to Bid;
        iv. Instructions to Bidders;
        v. Bid Data Sheet;
        vi. 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;
        vii. Bill of Quantities;
        viii. General and Special Conditions of Contract;
        ix. Supplemental Bid Bulletins, if any; and
        x. Other contract documents that may be required by existing laws and/or the Entity.

b) Winning bidder's bid, including the Eligibility Requirements, Technical and Financial Proposals, and all other documents or statements submitted;

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 PBD, such as but not limited to the Notice to Proceed and Warranty Security.

3) In consideration of the Contract Price of *[Contract Price in words and figures],* or such other sums as may be determined in accordance with the terms of the Contract, the Supplier agrees to deliver and perform the items and related services for the *[Project Title]* described herein in accordance with the terms and conditions specified in the Contract and its annexed documents.

4) The *[Name of the Procuring Entity]* agrees to pay the above-mentioned sum to the Supplier in accordance with the schedule and manner provided in the Bidding Documents and its annexes.

5) Any dispute, difference, or claim arising out of or relating to this Contract, including its existence, validity, interpretation, breach, or termination thereof, may be submitted to arbitration or other form of alternative dispute resolution in accordance with the applicable law, such as Republic Act (RA) No. 9285 (Alternative Dispute Resolution Act of 2004) or Executive Order No 1008, series 1985 (Construction Industry Arbitration Law).

IN WITNESS WHEREOF**,** the parties hereto have caused this Contract to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written

For the Procuring Entity Head of the Procuring Entity or Duly Authorized Representative	*For the Bidder* Duly authorized to sign the Contract for and behalf of *[Bidders Name]*:
[Signature over Printed Name][Position/Designation] *[Date]*	*[Signature over Printed Name]* *[Position/Designation]* *[Date]*

Signed in the presence of:

[Name and Signature]	*[Name and Signature]*
Witness – Procuring Entity	*Witness- Supplier*

ACKNOWLEDGMENT

BEFORE ME, A Notary Public for and in the _____, City/Province of _____, this _____ day of _____, 20_____, personally appeared the above-named persons who have satisfactorily proven to me their identity, through their identifying documents written below their names and signatures, that they are the same persons who executed and voluntarily signed the foregoing instrument consisting of ____ pages, including this page where this Acknowledgement is written, which they acknowledged before me as their free and voluntary act and deed.

WITNESS MY HAND AND SEAL this ___ day of *[month] [year].*

NAME OF NOTARY PUBLIC
Notarial Commission No. _____
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 _____

Omnibus Sworn Statement Form

[Note: The duly accomplished form shall be submitted with the Bid]

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

OMNIBUS SWORN STATEMENT

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

1) *Select one, delete the others:*
   - *If sole proprietorship:* I am the sole proprietor or authorized representative of *[Name of Bidder]* with office address at *[Address of Bidder]*;

   - *If 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]*;

   - *If individual consultant not registered under a sole proprietorship, in case of Consulting Services:* I am the individual consultant or authorized representative of *[Name of Bidder]* with office address at *[Address of Bidder]*;

2) *Select one, delete the others:*

   - *If 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 *[Project Title]* of the *[Name of the Procuring Entity][insert* "as supported by the attached duly notarized Special Power of Attorney" *for authorized representative]*;

   - *If 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 *[Project Title]* of the *[Name of the Procuring Entity]*, as supported by the attached duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary's Certificate, whichever is applicable*;*

   - *If individual consultant not registered under a sole proprietorship, in case of Consulting Services:* As the individual consultant 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 *[Project Title]* of the *[Name of the Procuring Entity]*, as

supported by the attached duly notarized Special Power of Attorney *for authorized representative*;

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;

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 others:*

- *If sole proprietorship :* The *[Name of Bidder]* and its spouse are not related by consanguinity or affinity up to the third civil degree to the Head of the Procuring Entity, Procurement Agent (if engaged), End-User or Implementing Unit, project consultants, head of the Project Management Office, or the members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat;

- *If partnership :* The partnership itself and the partners of *[Name of Bidder]* are not related by consanguinity or affinity up to the third civil degree to the Head of the Procuring Entity, Procurement Agent (if engaged), End-User or Implementing Unit, project consultants, head of the Project Management Office, or the members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat;

- *If cooperative:* The cooperative itself and members of the board of directors, general manager, or chief executive officer of *[Name of Bidder]* are not related by consanguinity or affinity up to the third civil degree to the Head of the Procuring Entity, Procurement Agent (if engaged), End-User or Implementing Unit, project consultants, head of the Project Management Office, or the members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat;

- *If corporation, or joint venture:* The corporation or joint venture itself, and officers, directors, and controlling stockholders of *[Name of Bidder]* are not related by consanguinity or affinity up to the third civil degree to the Head of the Procuring Entity, Procurement Agent (if engaged), End-User or Implementing Unit, project consultants, head of the Project Management Office, or the members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat;

- *If individual consultant not registered under a sole proprietorship, in case of Consulting Services:* The individual consultant and its spouse are not related by consanguinity or affinity up to the third civil degree to the Head of the Procuring

Entity, Procurement Agent (if engaged), End-User or Implementing Unit, project consultants, head of the Project Management Office, or the members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat;

7) It is understood that failure to faithfully disclose its relationship with the HoPE, members of the BAC, the TWG, and the BAC Secretariat, the head of the PMO or the end-user unit or implementing unit, and the project consultants of the Procuring Entity, or of the procurement agent by consanguinity or affinity up to the third civil degree, as well as its submission of beneficial ownership information containing false entries shall be subject to blacklisting under Section 100 of the IRR of RA No. 12009, without prejudice to criminal and civil liabilities under applicable laws, including their accessory penalties, if any.

   Select one, delete the rest:

   - *In case of corporations: [Name of Bidder]* declares its beneficial ownership information consistent with its updated General Information Sheet or Beneficial Ownership Declaration Form or any other document duly submitted to the SEC and has maintained a valid and updated file therein in compliance with Sections 20.2.9.1, 81, and 82 of the IRR of Republic Act (RA) No. 12009.

   - *In case of Foreign Bidders: [Name of Bidder]* submitted an appropriate equivalent document in English issued by the country of the bidder concerned in accordance with Section 20.2.9.2 of the IRR of RA No. 12009.

8) *[Name of Bidder]* complies with existing labor laws and standards; and

9) *[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 *[Project Title]*.

10) *[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.

11) In case advance payment was made or given to *[Name of Bidder]*, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability under existing laws.

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

Duly authorized to sign the Bid for and behalf of:

[Insert Bidder's Name]

[Affiant's Signature over Printed Name]
[Position/Designation]
[Date]

JURAT

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

WITNESS MY HAND AND SEAL this ___ day of *[month] [year].*

NAME OF NOTARY PUBLIC
Notarial Commission No. _____
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

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

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

BID SECURING DECLARATION

Project Identification No.: *[Number]*

To: *[Insert name 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 shall enter into contract with the Procuring Entity and furnish the required performance security within ten (10) calendar days as indicated in the Bidding Documents, from receipt of the Notice of Award;

   b) I/we will be automatically disqualified from bidding for any procurement contract with any Procuring Entity upon receipt of your Blacklisting Order; and

   c) I/We will pay the applicable fine 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 52.2 (a), 63.2, 69.1 and 100, except 100.3 (c), of the IRR of RA No. 12009; without prejudice to other legal action the government may undertake;

	Applicable Fine
a) in the case of a single bidder	i) two percent (2%) of the Approved Budget for the Contract (ABC); or ii) the difference between the evaluated bid price and the ABC whichever is higher
b) in the case of multiple bidders	i) two percent (2%) of the ABC; or ii) the difference between the evaluated bid prices with the

	bidder with Lowest Calculated/Highest Rated Bid and the bidder with the next Lowest Calculated/Highest Rated Bid, and so on whichever is higher
c) in case of violations committed prior to the opening of the financial envelope	i) a fixed amount of two percent of the ABC,

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 *[Insert Award Criterion[1]]* 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]*.

Duly authorized to sign the Bid for and behalf of:

[Insert Bidder's Name]

[Signature over Printed Name]
[Position/Designation]
[Date]

JURAT

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

WITNESS MY HAND AND SEAL this ___ day of *[month] [year].*

NAME OF NOTARY PUBLIC
Notarial Commission No. _____
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 _____

Republic of the Philippines
gppb
Government Procurement Policy Board

CIVIL WORKS CONTRACT

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SECTION I
MOBILIZATION/DEMOBILIZATION AND TEMPORARY WORKS

101 Scope of Work

a. MOBILIZATION

Mobilization shall include all activities and associated costs for transportation of Contractor's personnel, equipment, and operating supplies to the site, establishment of temporary field office and other necessary general facilities for the Contractor's operations at the site.

The Contractor shall mobilize and move into the Project Temporary Works and Construction Site. Mobilization of Construction Equipment at Work Site within 1 calendar day after receipt of Notice to Proceed the required initial equipment requirement as listed in the Bid Document.

Notwithstanding the mobilization of the initial equipment requirements, the Contractor shall mobilize to the Site the additional equipment requirement within 10 calendar days upon receipt of the approved Equipment Moving-in and Utilization Schedule.

If for the reasons or causes other than "major calamities", the Contractor fails to mobilize fully the initial equipment required within said period, and all other equipment listed in his approved Equipment Moving-in and Utilization Schedule, at the discretion of the Department Manager A, he may be given an extension of time to mobilize them fully but in no case shall it exceed 30 calendar days. Failure to fully mobilize the required construction equipment within said period will be a ground for contract rescission. During said extension period liquidated damages equivalent to the daily operated ACEL rental rate of eight hours of the undelivered equipment per day of delay shall be imposed and collectible from any subsequent payment due the Contractor. If delays are caused by "major calamities', the corresponding number of calendar days caused by such calamities will not be counted. Delays shall be reckoned starting at 12:00 o'clock noon of the succeeding day after the date scheduled for the mobilization of the programmed equipment. The Department Manager A or his authorized representative shall certify to the date of actual mobilization of the programmed equipment to the site.

The Department Manager A or his authorized representative shall check and verify the number, type and actual condition of the equipment moved into the Project Site. The NIA reserves the right to order the removal of such equipment that are not in good working condition from the Project Site at the Contractor's expense and said equipment are not to be counted for as mobilized.

Construction equipment once moved into the Project Site, checked and accounted shall not be permitted, prior to the completion of the Contract Work, to be moved out or transferred by the Contractor to another Project Site without the written approval of the Department Manager A or his authorized representative.

Periodic check-up of the Contractor's equipment moved-in for the Contract Work shall be conducted by NIA. The Contractor will pay to NIA the amount equivalent to the ACEL Rental Rate of any equipment not accounted for during said check-up for the number of calendar days the equipment have been removed (without the written consent of the Engineer) from the Project Site until said equipment have been returned. Such cases are grounds for disapproval of claims by the Contractor for time extensions.

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b. DEMOBILIZATION

Demobilization shall include dismantling and removal from the site of Contractor's Construction Plant, materials and equipment and all Temporary Facilities with the exception of some facilities, which NIA shall consider to remain and which shall be handed over to NIA at the time of demobilization in a fully operational condition. Demobilization shall also include clean-up of the site after completion of the Contract Work and disposed it outside the NIA Compound as approved and accepted by Department Manager A or his authorized representative and transportation of Contractor's employees from the site.

c. TEMPORARY WORKS

This item includes the construction of temporary facilities to be used by the Contractor. The Contractor shall provide all temporary lighting, power, water supply and all necessary facilities sufficient enough for the simultaneous use of all possible fields of work to complete the project.

The Contractor must provide project billboard showing information about the project. The Project Billboard shall be strategically placed within the site vicinity; *(as provided on the General Guidelines and Legal Mandates of the Commission on audit to promote good governance and/or publicity for or otherwise relating to the Projects/Programs/Activities (PPA) shall be made at the least possible cost). Hence, for infrastructure projects, one (1) tarpaulin signboard must be suitably framed for outdoor display at the project location and shall be posted as the award has been made. The design and format of the tarpaulin, shall have the following specifications:*

- Tarpaulin, white, 4ft. x 8ft. posted on 3/16" marine plywood
- Resolution: 70 dpi
- Font: Arial
- Font Size: Main Information – 3"
- Sub-Information - 1"
- Font Color: Black

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Republic of the Philippines
OFFICE OF THE PRESIDENT
NATIONAL IRRIGATION ADMINISTRATION
MAGAT RIVER INTEGRATED IRRIGATION SYSTEM
HEAD OFFICE

BAGONG PILIPINAS

PROJECT: _____ COST: _____
LOCATION: _____ FUND SOURCE: _____

IMPLEMENTING AGENCY: _____
CONTRACTOR/SUPPLIER: _____
BRIEF DESCRIPTION OF THE PROJECT: _____

PROJECT DETAILS:

PROJECT DATE			PROJECT STATUS				REMARKS
DURATION	STARTED	TARGET DATE O COMPLETION	% OF COMPLETION	AS OF (DATE)	COST INCURRED TO DATE	DATE COMPLETED	

For particulars or complaints about this project, please contact the Regional Office or Cluster which has audit jurisdiction on this project:

COA Regional Office No./Cluster: _____
Address: _____
Contact No.: _____ or Text COA Citizen's Desk at 0915-5391957

Nat

d. CONSTRUCTION SAFETY AND HEALTH PROGRAM

This item includes provision of safety gadgets (hard hat, safety vest and safety shoes) for all workers on the hard hat area; f St. Gerrard Construction Gen. Contractor & Development Corp./ Alphatec Chemical Corp. (Joint Venture) irst aid kit, as well as the provision of necessary safety signages on site.

102 Basis of Payment

Payment for mobilization, demobilization, temporary works and construction safety and health program shall be made at the fixed lump sum price or lump sum bid price whichever is stated in the Bill of Quantities, which shall not be subject to price escalation and adjustment.

SECTION II

EMBANKMENT CONSTRUCTION AND FORMATION

SCOPE

The work under this Section shall consist of spreading materials taken from canal excavation, structure excavation, side borrow and borrow haul into canal embankments or protection dikes or approaches to bridges and road crossings and into all other embankments indicated on the drawings; moisture conditioning and then compacting said materials into the desired degree of compaction, all in accordance with the drawings and these specifications or as directed by the Engineer. All works associated with Side Borrow and Borrow Haul Operations, and Overhaul for canal embankment are considered subsidiary works for Embankment Construction and Formation

SOURCES OF MATERIALS

Materials for embankment and structure backfill for canal and diversion structures may be taken from canal or structure excavation in accordance with Sections IV and VI. In case where excavated materials from canal prism or from structure excavations are insufficient or unsuitable for embankment formation, additional materials may be taken from side borrow or borrow haul areas not necessarily designated by NIA including acquisition of necessary right-of-way and access thereto. Likewise, materials for protection dikes and approaches to bridges and road crossing may be taken from sources at the Contractor's choice including acquisition of necessary right-of-way. However, possible borrow areas are indicated in the Bid Drawings or as suggested by the Engineer.

FORMATION

Watering equipment for moisture conditioning of the embankment materials, prior to Backhoe Bucket Damping along newly constructed Slope, shall be designed to apply water uniformly at the rates required by NIA. Water tank trucks shall be equipped with positive shut-off valves such that no leakage will result from the nozzle when the equipment is not in used.

METHOD OF CONSTRUCTION

This paragraph covers the construction of all embankments designated on the drawings as compacted embankment including the placing of embankment materials to the low and over excavated areas in the canal. All compacted embankments shall be constructed to the lines, grades and dimensions shown on the drawings, or established by the NIA on a properly prepared foundations approved by the NIA. No objectionable materials shall be placed on the embankments.

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Ground surface upon which the embankment is to be constructed shall be scarified to a depth of at least 15 cm. after clearing and grubbing, moisture conditioned, and compacted to not less than the required degree of compaction as shown in Table A below. Materials unsuitable for embankment foundations shall be removed as directed and replaced with suitable materials and compacted as compacted embankment.

Embankments shall be constructed to the lines, grades and dimensions shown on the Drawings or as established by the Engineer. Embankments shall be constructed in horizontal layers which extend the full width of the embankment.

When embankments are to be made on hillsides, whether paralleling a hillside, abutting into a hillside or crossing over a hill, a slope of the original hillside shall be cut horizontally as the work is brought up in layers. Material thus cut shall be recompacted along with the new embankment material

During construction, the Contractor shall keep the top of the embankments at such elevation and section to provide natural surface. the top of the If the Contractor stops work on any portion of the embankment on account of rain or impending rain, the surface shall be graded to facilitate drainage and the surfaces shall be sealed by passing rubbertired equipment or flat drum rollers over the surface. Before work is resumed on the area, the surface shall be scarified to a minimum depth of not less than 15 cm., releveled, moisture conditioned, and recompacted to the specified density.

Should the NIA determine that any portion of the surface of the embankment has become so dry or glazed during construction that bond with the succeeding layer to be placed thereon cannot be obtained, or should ruts develop on the embankment, such surface shall be scarified to a minimum depth of 15 cm., relevelled, moisture conditioned and recompacted to the specified density just prior to placing of the succeeding layer of the embankment.

All surfaces of the compacted embankment shall be compacted to the lines, and grades shown on the Drawings or as directed by the Engineer with the tolerances in accordance with Paragraph 403 (b) for slopes and surfaces and a tolerance of + 10 cm. for profile surfaces and shall be graded to a uniform slope.

Canal embankments for roadways shall be constructed only up to the elevation of the base of the road surfacing material. The road shoulders shall be placed and compacted together with the road surfacing materials.

METHOD OF MEASUREMENT

Measurement shall be done by the cubic meter of embankment in its final accepted,

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compacted position less the volume for road surfacing materials if any, regardless of the origin of materials and the required degree of compaction. Computation shall be by the Average End Area Method for every 20 M station or by the applicable method suitable for the work involved. The volume shall be the theoretical volume of the embankment as computed based on the neat lines or paylines shown on the Drawings. The lower limit shall be the elevation of the ground surface after stripping and the upper limit shall be the top of the embankment.

BASIS OF PAYMENT

The volume measured for embankment as provided above shall be paid at the contract unit price per cubic meter, the price and payment shall constitute full compensation for any side borrow, borrow haul and overhaul operations made, stripping of foundations (where necessary), spreading, blending, moisture conditioning and compaction and trimming side slopes (where necessary) including all labor, tools, equipment and all incidentals and subsidiary works, necessary for the successful completion of the work described under this Section. Provided, however, that payment shall only be made after presentation by the Contractor of a certification issued by the NIA Materials Testing Engineer to the effect that the constructed embankment measured and covered by such progress payment has attained the required degree o

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SECTION III

CANAL EXCAVATION

SCOPE

Canal Excavation includes the removal of all materials within the structure lines including necessary dewatering operations not otherwise specified. It shall also include additional excavations within the vicinity of the structure in order to shape the ground as shown on the Drawings or as directed by the Engineer.

CLASSIFICATION

Canal excavation shall be classified in accordance with paragraph 402.

CONSTRUCTION REQUIREMENTS

All excavation requirements described in paragraph 403 are applicable under this Section.

METHOD OF CONSTRUCTION

All structures, where practicable shall be constructed in open excavation. The method of construction or excavations shall be in accordance with the applicable provisions of paragraph 404 and the following requirements.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the Engineer, and shall be of sufficient size to permit free movement of workers.

On excavation of common materials the foundation bed upon which structures are to be placed shall be finished accurately to the established lines and grades after a thorough compaction and trimming of the foundation with the use of suitable tools and equipment. As soon as the foundation excavations have been trimmed to their final level, it should be protected from degradation by weathering. Should the foundation material soften through exposure then the soft material shall be removed and replaced at the Contractor's expense. If at any point, material is excavated beyond the lines and grades of any part of the structure, the over-excavation shall be filled with selected materials approved by the Engineer and shall be placed in layers of not more than 20 centimeters thick, moistened and thoroughly compacted by special roller, mechanical tampers or by other approved methods. A density not less than 90% of the maximum dry density determined by ASTM test D-698 is required. The cost of filling over-excavation ordered by the Engineer shall be borne by the Contractor.

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On excavation of rock materials, the bottom and side surfaces of excavated rock excavation upon or against which concrete and weep holes are to be placed shall conform to the required grades and dimensions as shown on the drawings or as established by the Engineer. If at any point, materials are excavated beyond the required limits, the over-excavation shall be filled with concrete at the expense of the Contractor including the cost of all materials required.

When concrete is to be placed upon or against rock, the excavation shall be of sufficient depth to provide for the minimum thickness of concrete at all points and any deviation from the required minimum thickness of concrete shall be avoided as much as possible. The surface on which concrete will be laid shall be trimmed and thoroughly cleaned as directed by the Engineer.

When excavation of rock materials reaches the surface upon or against which concrete is to be placed, blasting shall be stopped and the remaining mass of rock shall be carefully removed by means of jack-hammer or any appropriate hand tool. The point beyond which blasting will not be allowed shall be determined by the Engineer. All damages to the rock foundation caused by improper blasting operation shall be repaired by the Contractor at his own expense in a manner acceptable to the Engineer.

All foundations for bridge pier footings shall be excavated to such depths as may be necessary to secure stable bearing for the structure. Whenever the safe bearing power of the soil as uncovered is less than that called for on the Drawings, pilings or appropriate spread footings will be used. The elevations of the bottoms of footings, as shown in the Drawings shall be considered as approximate, and the Engineer may order, in writing, such changes in elevations and dimensions of footings as may be necessary to ensure a satisfactory foundation. Bearing tests, upon written order of the Engineer, shall be taken to determine the supporting power of the soil. Cost of bearing test will be paid as "Extra Work".

If, in the opinion of the Engineer, the material at the base of the excavation is unsuitable for foundation he shall instruct the Contractor to either a) Carry out additional excavation to a depth of 50 cm. below the proposed bottom of concrete shown on the Drawings and to maximum depth of 60 cm. outside of the outermost lines of said base and replace with backfill compacted to at least 90% of the maximum dry density or b) strengthen the soft material by ramming in gravel and cobbles until a firm foundation is obtained. Measurement and payment for the backfill shall be made under Section XII, "Structure Backfill".

METHOD OF MEASUREMENT

Structure Excavation shall be measured by the cubic meter in its original position before being excavated in accordance with the Drawings, or as may be ordered by the Engineer. No excavation beyond the paylines shown on the Drawings will be measured for payment. For canal structures, the limit of measurement along the lines perpendicular to the flow of water shall be the vertical planes at the outer edges of the inlet cut-off

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walls. The upper limits of the solid measured for payment shall be the canal bottom for canal structures or the original ground surface in case of diversion structures. The lower limit shall be the bottom of the required excavation. Excavated materials not vertically above the boundaries as specified above shall not be measured for payment. The volume measured shall not include water and other liquids removable by pumping. Such materials as mud, muck, quagmire and other similar semi-solids not removable by ordinary pumping shall be considered pay quantities and shall be measured and paid for as "Structure Excavation".

However, in case structure excavation for canal structures is done before canal excavation, the upper limit of the solid measured for payment shall be the original ground surface in accordance with the structure excavation paylines.

BASIS OF PAYMENT

The volume measured as provided above will be paid per cubic meter, which price and payment shall constitute full compensation for furnishing all materials, supplies, labor, equipment, tools and incidentals and subsidiary works necessary to complete the work described under this Section.

For diversion works, canal siphons and bridge structure excavations, the cost of dewatering operation unless otherwise specified in the Bill of Quantities shall be paid under a separate item in the Bill of Quantities. For all other structure excavations, dewatering operations involved are considered subsidiary works and the cost thereof shall be considered included in the unit price of structure excavation.

The Contractor shall be paid sixty percent (60%) of the pay quantities of the actual excavation acceptably accomplished in accordance with the paylines as shown on the Drawings or as directed by the Engineer. The remaining forty percent (40%) will be paid upon pouring of concrete for the foundation or upon placing of riprap, gravel blanket or grouted riprap in accordance with the Drawings and Specifications.

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SECTION IV

STRUCTURE BACKFILL

SCOPE

The work under this Section shall include hauling (if necessary) and backfilling with suitable materials taken either from Structure Excavation, Canal Excavation, Side Borrow or Borrow Haul all spaces excavated and not occupied by the structure and spaces between the natural ground surface and the finish lines indicated to be filled and all other sections directed to be filled by the Engineer, all in accordance with these specifications and in conformity with the lines, grades and dimensions shown in the Drawings or as ordered by the Engineer. It shall also include the dewatering and removal of all unsuitable materials as ordered by the Engineer from the spaces to be backfilled or filled.

METHOD OF CONSTRUCTION

All spaces to be backfilled or filled shall be cleared of all rubbish and other objectionable matter. The excavation pit to be backfilled shall be dewatered and all mud and loose materials shall be removed before backfilling. The filling materials, with the proper moisture content determined by the Engineer, shall be deposited loose and in layers not exceeding 30 centimeters and then thoroughly compacted by ramming, rolling or by means of mechanical tampers or portable vibratory compactors to obtain at least 85% compaction behind bridge abutments, retaining walls, cut-off walls and immediately above pipes, box or barrel conduits and gradually increasing to at least 90% compaction up to the surface of the roadway in the case of approaches to bridges, Road Crossing or Culvert Structures. The time when to start backfilling operation shall be determined by the Engineer.

The compacted backfill above pipes, barrels and other conduits, shall be brought at least 60 centimeters before any compacting equipment utilized in embankment construction shall be used or allowed to pass. Additional layers above 60 centimeters can be completed by the use of roller type compacting equipment employed in embankment compaction.

Materials for structure backfill shall be as described in Paragraph 902 (c).

METHOD OF MEASUREMENT

Structure backfill shall be measured in cubic meters in its final compacted and uncompacted position within the limits of structure excavation paylines and surfaces of concrete in contact with the backfilled material as shown on the Drawings or as directed by the Engineer. Volumes occupied by the structure and other features will not be included.

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BASIS OF PAYMENT

Structure Backfill will be paid for at the contract unit price per cubic meter, which price and payment shall constitute full compensation for side borrow, borrow haul and overhaul operations and for furnishing all labor, equipment, tools and all incidentals and subsidiary works necessary for the successful completion of the work under this Section.

For newly constructed Drainage Culvert, the volume between the original ground surface and the top of the canal embankments is part of the embankment construction operation and therefore shall not be included for payment under this Section (which payment shall be included under embankment construction and compaction)

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SECTION V

CONCRETE

SCOPE

This Section covers all the materials as cement, aggregates, water, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

All the applicable provisions of the latest revision of the ACI Building Code (ACI-318-63) and American Society for Testing Materials (ASTM) shall govern in all cases not specifically provided for herein.

CONCRETE COMPOSITION

Concrete shall be composed of portland cement, fine and coarse aggregates, water, and if necessary, admixtures or agents approved by NIA. The design of concrete mixtures and consistency shall be as specified in this Section.

CEMENT

a) **General**. The cement shall conform to the requirements of the standard specifications for Portland Cement (ASTM: C-150 Type 1). Special Cement may be used subject to the approval of the Engineer provided it meets the requirements of Portland Cement with regards to strength, soundness and setting time.

b) **Storage**. Contractor shall, immediately upon delivery of cement to the jobsite, store the same in a dry, weathertight and properly ventilated structure with adequate provisions for the prevention of absorption of moisture. All storage facilities shall be subject to the approval of the Engineer and shall be such as to permit easy access for the inspection and identification. In order that cement may not become unduly aged after delivery, the Contractor shall use any cement of the same type, which has been stored at the site for 60 days or more before using cement of lesser storage age. Any cement stored at the project site over four months shall not be used unless retest proves it to be satisfactory. Sacked cement shall not be stocked higher than 14 sacks for storage for a period of not longer than 30 days and not higher than seven sacks for longer period.

c) **Payment**. Payment for cement shall be considered included in the contract unit price for the various items of concrete in the Bill of Quantities for which cement is used.

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ADMIXTURES

In order to reduce the cement content and/or the amount of mixing water, and to improve the concrete workability, the Contractor may be allowed to use Admixtures and as such he shall submit to NIA for approval such Admixture he proposes to use. The Contractor shall be required to submit manufacturer's brochures and data sheets for review together with detailed proposals on how the admixtures will be used in the works. This information should be supported with mix designs and the results of trial mixes. All admixtures shall be used strictly in accordance with the manufacturer's recommendations. However no additional payment will be made by NIA to the Contractor in view of this as the cost thereof is considered included in the contract unit price for the different classes of concrete.

The following type of admixtures will be given consideration by the NIA provided that they conform to the provisions of this Paragraph:

1. Air entraining agent

2. Water reducing admixtures

3. Water reducing and retarding admixtures

4. Water reducing and accelerating admixtures

Admixtures shall be furnished in a powder or liquid form. If furnished in a solution it shall contain at least 50% solids and a mold inhibitor. The admixtures effect on the properties of Portland cement concrete mixtures shall meet the requirements of ASTM: C-494.

Admixtures will be accepted on manufacturers certification of conformance with the specifications but permission to slip on certification shall in no way relieve the Contractor of responsibility for furnishing an admixture not meeting specification requirements. Where the Engineer has reason to believe that testing is necessary to prove compliance with the requirements of these specifications, it may order these admixtures to be sampled and tested anytime. The Contractor shall provide facilities satisfactory to the Engineer for readily procuring samples for test.

Air Entraining Agent. Concrete produced with water reducing agents shall contain four to six per cent of air entraining agent by volume. The air entraining agent shall conform to the requirements of ASTM: C 260, and shall be tested in accordance with ASTM: C 233. The total calculated air content of the concrete as discharged from the mixer shall be as follows:

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Coarse Aggregates Maximum Size	Total Air - Per cent by Volume of Concrete
2 cm.	5 + 1
3.8 cm.	4 + 1

The agent in solution shall be maintained at uniform strength and shall be added to the batch in a portion of the mixing water. This solution shall be batched by means of a mechanical batcher capable of accurate measurement. When a retarder dispersing agent is used in the concrete, the portion of the mixing water containing the air-entraining agent shall be introduced separately into the mixer.

Water Reducing Agent or Water Reducing and Set Retarding Agent. The Contractor may be allowed to use an approved water reducing agent, or water-reducing and set retarding agent in concrete. The ASTM designations for these admixtures are Type A and Type D, respectively. The agent used shall be either suitable calcium, sodium or ammonium salts of lignosulfonic acids or of the nonlignin, hydroxylated carboxylic and acid groups. The agent shall be of uniform consistency and quality within each container and from shipment to shipment.

The amount of water reducing, or water reducing and set retarding agent to be used in each concrete mix shall in general be within the following limits:

Lignosulfonic Acid Type	-	0.27 to 0.37 percent of solid rystalline ligning, by weight, of cement.
Hydroxylated Carboxylic Acid Type	-	0.25 to 0.50 percent of liquid, by weight of cement.

Water Reducing and Accelerating Admixture. The ASTM designation for this admixture is Type E. Water reducing and accelerating admixture may be used by the Contractor for speeding up precasting and post-tensioning operations for precast and pre-stressed beams, girders, slabs and bearing pads, if approved.

WATER

The water used in concrete, mortar and grout shall be free from objectionable quantities of silt, organic matter, alkali, salts and other impurities. The recommendation of the seventh edition of the U.S. Bureau of Reclamation Concrete Manual for mixing water shall be followed.

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FINE AGGREGATES

a) General. The term "Fine Aggregates" is used to designate aggregates in which the maximum size of particles is 5 millimeters. Fine aggregates for concrete, mortar and grout shall be provided by the Contractor and shall consist of natural sand, manufactured sand, or a combination of both. The different components shall be batched separately, or subject to the written approval of the Engineer, or blended prior to delivery to the batching plant.

As a means of providing moisture control, the Contractor may be required to stockpile the fine aggregates over porous storage to drain excessive water and to stabilize moisture content.

b) Quality. Fine aggregates shall conform to the requirements of ASTM C-33 and shall consist of hard, tough, durable, uncoated rock particles. The Contractor shall exercise every possible precaution in transporting, washing and screening operations to prevent contamination of sand particles. Fine aggregates shall conform to the following requirements:

1. **Grading** -It is assumed that the sand available in natural deposits will require processing to provide a suitable gradation. Regardless of the source, the fine aggregates shall be well graded from fine to coarse and the gradation as delivered to the mixers shall conform to the following requirements unless otherwise approved:

Sieve Designation US Standard Square Mesh	Percent by Weight Passing Individual Sizes
3/8" (9.50mm)	100
No. 4 (4.75mm)	95-100
No. 8 (2.36mm)	85- 95
No. 16 (1.18mm)	60- 85
No. 30 (600um)	25- 60
No. 50 (300um)	10- 30
No. 100 (150um)	2- 10

In addition to the grading limits shown above, the fine aggregates as delivered to the mixer shall have the fineness modulus of not less than 2.30 or more than 3.00. The grading of the fine aggregates also shall be controlled so that the fineness moduli of at least 9 to 10 test samples of the fine aggregates as delivered to the mixer shall not vary more than 0.10 from the average fineness modulus of all samples previously taken. The fineness modulus shall be determined by dividing by 100, the sum of the cumulative percentages retained on US standard sieves No. 4, 8, 16, 30, 50 and 100. At the option of the Contractor fine aggregates may be separated into two or more sizes or classifications, but the resulting sand when combined before entering the concrete mixer shall be of uniform grading within the limits specified above.

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2. **Particle Shape**. The shape of the particles shall be generally spherical or cubical and reasonably free from flat or elongated particles. A flat or elongated particle is defined as a particle having a maximum dimension in excess of five times the minimum dimension. Rocks which breaks down into such shape, regardless of the type of processing equipment used, will not be approved for use in the production of fine aggregates.

3. **Deleterious Substances**. the maximum percentages of deleterious substances in the fine aggregates as delivered to the mixer shall not exceed the following values:

	Percent by . Weight .
Materials passing no. 200 Screen (Designation 16)*	3
Shale(Designation 17)	1
Clay (designation 13)	1
Total of other deleterious substances (such as alkali, mica, soft, flaky particles and loam)	2

* The designation in parenthesis refers to methods of testing described in the seventh (7th) edition of the US Bureau of Reclamation Concrete Manual and ASTM.

The sum of the percentages of all deleterious substances shall not exceed 5% by weight. Fine aggregates producing a color darker than the standard in the colometric test for organic impurity (USBR designation 14 or ASTM C-40) may be rejected. Fine aggregate having specific gravity (USBR Designation 9 or ASTM C-128, saturated surface dry basis) of less than 2.60 may be rejected. The fine aggregate may be rejected if the portion retained on No. 50 (300 um) screen, when subjected to five cycles of sodium sulphate test for soundness (USBR designation 19 or ASTM C-88) shows an average loss of more than 18% by weight. Fine aggregates delivered to the batching plant may be rejected if it contains more than 0.10% soluble sulphate for any one sample or more than 0.10 for an average of at least 9 out of 10 consecutive test samples of finished sand, when samples are taken hourly. The percent soluble sulphate in fine aggregates shall be determined in accordance with the method of test prescribed in subparagraph 4. below.

4. **Sampling** - Sampling of fine and coarse aggregates shall be done in accordance with paragraph 1509. The source from which fine and coarse aggregates is to be obtained shall be selected well in advance of the time when the materials will be required

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in the work. Unless otherwise specified, all test samples shall be taken under the supervision of the Engineer in sufficient time as approved to permit adequate testing and examination of results sufficiently in advance of the time for use in concrete. Routine control test and analysis of the fine and coarse aggregates at various stages in the processing operation shall be made. The approval of a source shall not be construed as containing approval of all materials from the source, and the Contractor will be held responsible for the specified quality of all such materials used in the work.

(c) Storage - Fine aggregates shall be stored in such a manner as to avoid the inclusion of any foreign materials in the concrete. The storage or stockpile shall be constructed so as to prevent segregation. Depositing of materials in storage and its removal therefrom shall be done in such a manner as to result in increasing the uniformity of the grading insofar as this is practicable. All fine aggregates shall remain in free drainage storage for at least seventy-two (72) hours prior to use. Sufficient live storage shall be maintained at all times to permit continuous placement of concrete.

(d) Measurement and Payment - Fine aggregates will not be measured for payment. The cost of excavation, stockpiling, transporting, processing, blending, handling and other costs for providing fine aggregates shall be considered included in the unit price bid for the various items in the Bill of Quantities for which fine aggregates are used.

COARSE AGGREGATES

(a) General - The term "Coarse Aggregate" is used to designate aggregates of such sizes as to fall within the range of 0.5 cm. to 7.5 cm or any size or range of sizes within such limits. The coarse aggregates shall be reasonably well graded within the nominal size ranges hereinafter specified. Coarse aggregate for concrete shall be furnished by the Contractor and shall consists of crushed rock or mixture of natural gravel and crushed rock as provided in paragraph 1508. Coarse aggregate, as delivered to the batching plant shall have a uniform and stable moisture content. Any rewashing found necessary to provide clean aggregates shall be done prior to finish screening. Rewashing shall not be performed in finish screen.

(b) Quality - Coarse aggregates shall conform to the requirement of ASTM C-33 and shall consist of hard, dense, uncoated durable rock fragments.

1. **Grading** - The coarse aggregates shall be well graded from fine to coarse. It shall be separated into the following specific size groups. The grading of the aggregates within the separated size groups as delivered to the mixer shall be as follows:

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S I Z E G R O U P S

Sieve Sizes		Per Cent by Weight Passing Individual Sizes				
US Std. Sq. Mesh		12.5 mm	18 mm	37.5mm	50mm	75mm
6"	(150 mm)	-		-	-	-
3"	(75mm)	-		-	-	100
2-1/2"	(63 mm)	-		-	100	90-100
2"	(50 mm)	-		100	95-100	35-70
1-1/2"	(37.5mm)	-		90-100	-	0-15
1"	(25 mm)	-	100	20-55	35-7	-
3/4"	(19 mm)	100	90-100	0-15	-	0-5
1/2"	(12.5mm)	90-100	-	-	10-30	-
3/8"	(9.5 mm)	40-70	20-55	0-5	-	-
No. 4	(4.75mm)	0-15	0-10	-	0-5	

Coarse aggregates shall contain not more than 1.5 per cent of materials passing the No. 200 sieve by meshing, nor more than 5% of soft fragments.

It shall have an abrasion loss of not more than 45 per cent at 500 revolutions.

Unless otherwise directed, the maximum sizes of aggregates to be used in concrete for the various parts of the work shall be in accordance with the following:

General Use	Maximum Aggregate Diameter
Lean Concrete to control water Intrusion and other miscellaneous uses	37.5 mm
Concrete for Footings, Walls, Slabs Beams, 0.22 to 0.75 meters thick	37.5 mm
Concrete for thin walls, slabs, beams, less than 0.22 meters thick	19 mm
Concrete for reinforced concrete pipes	12.5 mm

In all cases, the diameter of the aggregate shall not exceed 1/2 the distance between the reinforcing steel bars of the members being placed.

2. **Particle Shape** - The particle shape of the crushed coarse aggregate shall be generally spherical or cubical and reasonably free from flat or elongated particles. A flat or elongated particle is defined as a particle having a maximum dimension in excess of five times the minimum dimensions. Rocks which breaks down into such shape will not be approved for the production of aggregate.

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3. **Deleterious Substances** - The deleterious substances in any size of coarse aggregate, as delivered to the mixer, shall not exceed the following values:

	Per Cent By Weight
Material Passing No. 200 (Screen Designation 16)*	1/2
Shale (Designation 18)	1
Clay Lumps (Designation 13)	1/2
Other deleterious substances	1

* The designations in parenthesis refers to methods of Testing described in the seventh edition of the U.S. Bureau of Reclamation Concrete Manual and ASTM.

The sum of the percentages of all deleterious substances in any size, as delivered to the mixer, shall not exceed 3% by weight. Coarse aggregate may be rejected if it fails to meet the following requirements:

1) **Petrographic Examination** - If more than 10% of poor aggregate particles can be identified in physical quality test and in case 20% of the particles would be classified with respect to the chemical quality (USBR Desig. 7 or ASTM C-295).

2) **Sodium-sulphate Test for soundness** (USBR Desig. 9 or ASTM C-88)- If the weighted average loss, after 5 cycles is more than 10% by weight.

3) **Specific Gravity** (USBR Desig. 10 or ASTM C-127) - If the specific gravity (saturated surface-dry basis) is less than 2.60.

4) **Sampling** - All sampling of coarse aggregates shall be in accordance with Paragraph 1509.

c) Storage - Coarse aggregate storage or stockpiles shall be built in such a manner as to avoid the inclusion of any foreign materials in the concrete and to prevent segregation and excessive breakage. Water sprayers shall be installed to keep that portion of the coarse aggregate stockpiles saturated which is intended for immediate use in the concrete. Sufficient live storage shall be maintained at all times to permit continuous placement of concrete.

d) Measurement and Payment - Coarse aggregates will not be measured for payment. The cost of excavation, stockpiling, processing, blending, handling and other cost for providing coarse aggregates shall be considered included in the unit price bid for the various items in the Bill of Quantities for which coarse aggregates are used.

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PRODUCTION OF FINE AND COARSE AGGREGATES

(a) **Source of Aggregates** - Fine and coarse aggregates for concrete, and fine aggregate for mortar and grout may be obtained by the Contractor from any approved source. Approval of deposit shall not be construed as constituting approval of all materials taken from the deposit, and the Contractor shall maintain the specified quality of all such materials used in concrete works. If the aggregates are to be obtained from deposits or quarry sources not previously tested and approved by NIA, Contractor shall submit, for preliminary test and approval, a representative, 90 kilograms (approximately 200 pounds) sample of the fine aggregate and of the 0.5 centimeters to 2 centimeter size of coarse aggregate and a 45 kilograms (approximately 100 pounds) sample of each of the other sizes of coarse aggregate proposed for use in the work, at least 90 days before the materials are required for use.

(b) **Developing Aggregate Deposit.** The Contractor shall carefully clear the area, from which aggregates are to be taken, of trees, roots, brush, sod, soil, unsuitable sand and gravel or aggregates, and other objectionable matter. The portion of the deposit used shall be located and operated so as not to detract from the usefulness of the deposit or of any adjacent property and so as to preserve, insofar as practicable, the future usefulness or value of the deposit. Waste materials removed from aggregate borrow areas shall be disposed of in approved locations.

(c) **Processing Raw Materials.** The Contractor shall employ processing equipment which will ensure well-shaped particle in all aggregate sizes and a minimum of particle which are flat or elongated. Processing of raw materials shall include screening, washing, and blending if necessary to produce fine and coarse aggregate meeting the requirements of Paragraphs 1506 and 1507. Processing of aggregates produced from any source shall be done at an approved site. Water used for washing aggregates shall conform to Paragraph 1505. To utilize the greatest practicable yield of suitable materials in the portion of the deposit being worked, the Contractor may crush oversize material and any excess materials of the size of coarse aggregate to be furnished, until the required quantity of each size has been secured, provided, that the crushed aggregates shall be blended uniformly with the uncrushed aggregates. Crushing and blending operations shall at all times be subject to approval by the Engineer.

Aggregates, as delivered to the mixers, shall consist of clean, hard and uncoated particles. When required, dust shall be removed from the coarse aggregate by adequate washing.

(d) **Moisture Control.** The free moisture control of the fine aggregate and smallest size group of coarse aggregate as delivered to the mixers shall be controlled so as not to exceed the value of 6.0 and 1.5, respectively, expressed as a percentage by weight of the saturated, surface dry aggregates. The percent variation of free moisture content in fine aggregate and the smallest size of coarse aggregate shall not exceed 0.5% and 2.0%, respectively, during any one hour of mixing plant operation. The free moisture

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of the other sizes of coarse aggregates shall be the least amount when delivered to mixers and variations shall be the least practicable under all job conditions. Sand shall have a uniform and stable moisture content. Under no conditions shall the other sizes of coarse aggregates be delivered to the mixing plant bins dripping wet. The Contractor may accomplish the required moisture control by use of free drainage storage, mechanical dewatering devices, or any other satisfactory means of dewatering.

AGGREGATE SAMPLING AND TESTING

Sampling of the aggregate materials approved for use in the work shall be done by the contractor in accordance with ASTM Sampling Method at 10 days in advance of the time when placing of concrete is expected to begin. Aggregate studies and tests will be made by the contractor at its own expense. It shall be the responsibility of the Contractor to designate the source(s) of aggregates early enough to give NIA sufficient time to obtain the necessary samples and have them subjected to tests.

The samples of aggregates shall be obtained and tested in accordance with the following ASTM standard methods:

Sampling aggregate	- C 75
Sieve Analysis	- C 136
Amount of material finer than 200 sieve	- C 117
Organic impurities	- C 40
Mortar Strength	- C 87
Soundness	- C 88
Soft Particles	- C 235
Abrasion	- C 131
Clay lumps	- C 142

No aggregate shall be used until official advice has been received that it has satisfactorily passed all tests, at which time written authority shall be given for its use. Material from source which has been previously tested and shown satisfactory compliance with all the requirements given herein may be used without further testing upon written permission of NIA. Test reports for previous tests must be available before approval can be given.

During construction, aggregates will be sampled as delivered to the mixer to determine compliance with specification provisions. Test shall be made in accordance with the applicable ASTM Standards. Routine control test and analysis of aggregates at various stages in processing, transporting, stockpiling, redraining, and batching, if used will be made by the contractor. The Contractor shall provide such facilities as may be considered necessary for the ready procurement of representative test samples. All test will be made by the contractor under the supervision of NIA.

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CLASSIFICATION AND PROPORTIONING OF CONCRETE MIXTURES

(a) **Classification and Design Mixtures**. The mixture for all classes of concrete shall be designed by the Contractor and approved by NIA to obtain the compressive strength at the age of 28 days as specified below:

Class	Minimum Strength (kg/cm2)	Maximum Aggregate Size (mm)	Minimum Cement (kg/m3)	Maximum Water/Cement Ratio
X	300	19	375	0.55
Y	210	12.5	350	0.60
AA	210	19	325	0.60
A	210	37.5	300	0.60
B	170	50	250	0.70
C	170	75	225	0.70
Z	140	75	200	0.85 no
Blinding (Concrete)	70	37.5	150	limit

(b) **Aggregate Content.** - Concrete mixtures shall be designed to use the largest size and the maximum amount of coarse aggregate as practicable for the intended use of the concrete.

(c) **Consistency.** - The amount of water to be used in the concrete shall be regulated as required to secure concrete of the proper consistency and to adjust for any variation in the moisture content or grading of the aggregates as they enter the mixer.

It shall be such consistency that it will flow around reinforcing steel bar but individual particles of the coarse aggregate when isolated shall have coating of mortar containing its proportionate amount of sand. The consistency shall be gauged by the ability of the equipment to properly place it and not by the difficulty in mixing or transporting. Addition of water to compensate for stiffening of the concrete before placing will not be permitted. Uniformity in concrete consistency from batch to batch will be required.

The slump of the concrete at the time of placing shall not exceed 5 centimeters in heavy concrete sections and at top of walls, piers and parapets, 10 centimeters for pumped or air placed concrete, and 7.5 centimeters for concrete elsewhere.

The Engineer reserves the right to require a lesser slump whenever concrete of lesser slump can be consolidated readily into place by means of the vibration specified in Paragraph 1517.

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(d) Notwithstanding the approval by NIA of the design mixtures and the above specified minimum cement content for different classes or gradation of aggregates, the Contractor shall be responsible that all the concrete meet the desired strength.

MEASUREMENT OF MATERIALS

All materials from which the concrete will be manufactured shall be mechanically measured by weight, except as otherwise specified and/or authorized by the Engineer and admixture solutions which may be measured by volume.

Measuring devices shall be suitably designed and constructed for the purpose and shall be weighing separately the cement, fine and coarse aggregates. The accuracy of all weighing devices shall be such that successive quantities can be measured to one per cent of the desired weights. Cement in standard bags (40 kilograms) need not be weighed. The water measuring devices shall be of such type and make to be readily controlled to obtain an accuracy of one-half per cent of the desired quantity of water.

Whenever volumetric proportioning and measurement is permitted due to failure or malfunction of weighing devices the equivalent volumetric proportions of weighed representative samples of the concrete ingredients shall be computed taking into consideration bulking effect of cement and variations of moisture content of the aggregates.

When sack or bag cement is used, the quantities of aggregates for each batch shall be for one or more full sack of cement. No batch requiring a fractional sack of cement will be tolerated.

MIXING AND DELIVERY

Ready-mixed concrete shall be mixed and delivered to the point designated by the Engineer by means of one of the following combination of operations:

- Mixed completely in a stationary mixer and the mixed concrete transported to the point of delivery in a truck mixer operating at agitator speed or in nonagitating equipment when approved by the Engineer. (Known as central-mixed concrete).

- Mixed completely in a truck mixer at the batching point or while in transit. (Known as transit-mixed concrete).

- Mixed completely in a truck mixer at the point of delivery following the addition of mixing water. (Known as truck-mixed concrete).

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Truck mixers and truck agitators shall be operated within a capacity not to exceed 63 or 80 percent, respectively of the gross volume of the drum and at a speed of rotation for mixing or agitating as designated by the manufacturer of the equipment. A truck mixer or truck agitator used for transporting concrete that has been completely mixed in a stationary mixer shall be operated within the limits of capacity and speed of rotation designated by the manufacturer for agitating, except that the agitator capacity shall in no event exceed 80 percent of gross drum volume.

When a stationary mixer is used for the complete mixing of the concrete, the mixing time for mixers having a capacity of 10 cubic yards (7.6 m3) or less shall be not less than 60 seconds. For mixers of more than 10 cubic yards (7.6 m3) capacity, the mixing time shall be determined by the Engineer. The time is valid provided mixer efficiency tests prove the concrete is satisfactory for uniformity and strength. Mixing time shall be measured from the time all cement and aggregates are in the drum. The batch shall be so charged into the Mixer that some water will enter in advance of cement and aggregates, and all water shall be in the drum by the end of the first one-fourth of the specified mixing time.

When a truck mixer is used for complete mixing, each batch of concrete shall be mixed for not less than 70 nor more than 100 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of the equipment on the metal plate on the mixer as mixing speed. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed. All materials including mixing water shall be in the mixer drum before actuating the revolution counter for determination of the number of revolutions of mixing.

When a truck mixer or truck agitator is used for transporting concrete that has been completely mixed in a stationary mixer, mixing during transport shall be at the speed designated by the manufacturer of the equipment as agitating speed.

When a truck mixer or truck agitator is used for transporting concrete, the concrete shall be delivered to the site of the work and discharge shall be completed within 1 hour after the addition of the cement to the aggregates. Each batch of concrete delivered at the job site shall be accompanied by a time slip issued at the batching plant, bearing the time of charging of the mixer drum with cement and aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 30^{o}C (85^{o}F) or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes. When a truck mixer is used for the complete mixing of the concrete, the mixing operation shall begin within 30 m minutes after the cement has been added to the aggregate.

- The concrete when discharged from truck mixers or truck agitators, shall be of the consistency and workability required for the job. The rate of discharge of the plastic concrete from the mixer drum shall be controlled by the speed of rotation of the drum in the discharge direction with the discharge gate fully open. If additional mixing water is required to maintain the specified slump and is added with the permission of the

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Engineer, a minimum of 20 revolutions of the truck mixer drum at mixing speed shall be required before discharge of any concrete.

When approved by the Engineer, central-mixed concrete which is designated for the purpose may be transported in suitable non-agitating equipment.

When non-agitating equipment is used for transportation of concrete the following requirements shall apply.

- Bodies of equipment shall be smooth, water-tight, metal containers equipped with gates that will permit control of the discharge of the concrete. Covers meeting the approval of the Engineer shall be provided for protection against the weather.

- The concrete shall be delivered to the site of the work in a thoroughly mixed and uniform mass and discharged with a satisfactory degree of uniformity. Slump tests of representative samples taken during the discharge shall not differ by more than 2 inches (50.8 mm). Discharge shall be completed within 30 min. after introduction of the mixing water to the cement and aggregates.

Concrete delivered in outdoor temperatures lower than 5^{o}C (40^{o}F) shall arrive at the work having a temperature not less than 15.6^{o}C (60^{o}F) nor greater than 32.2^{o}C (90^{o}F).

The volume of concrete mixed or transported shall not be less than 15 percent of the gross volume of the drum.

RE-TEMPERING

Concrete, mortar and grout mixers which have developed initial set shall not be used. Concrete, mortar and grout which have partially hardened shall not be retempered or remixed.

SAMPLING AND TESTING OF CONCRETE

The Contractor shall provide the required samples of Concrete to be furnished by the Contractor without cost to NIA. Sampling will, in all cases be performed by the contractor under the direct supervision of the Engineer and Contractor shall provide without cost to NIA all available tools and labor as may be required. Concrete sampling shall be carried on during concrete operations at the rate of one standard sample for each 75 cubic meters of concrete or fraction thereof placed during each continuous placing operations but in no case shall there be less than one sample for each day concreting. Each standard sample shall consist of three standard cylinders (6-inch diameter by 12-inches high.) The Contractor shall keep a record of the samples and the portion of the structures and volume represented which shall be available to NIA on demand.

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Sampling shall conform to ASTM Designations C-172, preparation, storage and curing to ASTM Designation C-31 and testing to ASTM Designation C-39. NIA shall have the sample tested by an approved testing laboratory at the expense of the Contractor.

CONVEYING AND PLACING CONCRETE

(a) **General**. Approval of the Engineer shall be obtained before starting any concrete pour. Concrete placement will not be permitted when, in the opinion of the Engineer, conditions prevent proper placement and consolidation. Before concrete is placed, all saw dust, chips, and other construction debris and extraneous matters will be removed from the interior of forms, struts, stays, and braces, serving temporarily to hold the forms in correct shape and alignments, pending the placing of concrete at their location, shall be removed when the concrete placing has reached an elevation rendering their services unnecessary as may be. These temporary members shall be entirely removed from the forms and not to be buried in concrete. Surfaces of existing concrete left after partial demolition against which new concrete is to be placed, shall be cleared thoroughly of all loose concrete coatings or concrete dust by brushing or other effective means followed by thorough washing or jetting. Such surfaces shall be kept moist for at least 24 hours before pouring the new concrete.

Concrete shall be placed only in the presence of the Engineer or his duly authorized representatives. Any and all concrete placed in the absence of the Engineer or his duly authorized representatives will not be considered for measurement and payment, and shall be removed at the discretion of the Engineer with the Contractor assuming all losses.

Concrete shall be conveyed from mixer to forms, as rapidly as practicable, by methods which will prevent segregation, or loss of ingredients. In case of circular siphons, pumpcrete shall be used. There shall be no vertical drop greater than 1.50 meters except where suitable equipment is provided to prevent segregation and where specifically authorized by the Engineer. Belt conveyors, clutch or similar continuously exposed flow, will not be permitted.

(b) **Concrete on Earth Foundation**. All concrete shall be placed upon clean and dump surfaces free from standing or running water. Prior to placing concrete, the earth foundation shall be satisfactorily compacted in accordance with these Specifications.

(c) **Concrete on Rock or Other Concrete.** Rock surface or hardened concrete upon or against which concrete is to be placed shall be clean, free from oil, standing or running water, mud, drummy rock objectionable coatings, debris, loose and semi- detached or unsound fragments. Fault, fissures and seams in rock shall be cleaned to a satisfactory depth and to firm rock on the sides. Immediately before concrete is placed, all surfaces shall be cleaned thoroughly by the use of high velocity, air water jets, wet sand blasting or other satisfactory means. When required by the Engineer, roughening by grooving with pneumatic tool, of existing concrete surfaces against which concrete is to be placed may be required. All surfaces shall be wetted before placing concrete and

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approximately horizontal surface shall be covered immediately, before the concrete is placed, with a layer of mortar not to exceed 15 millimeters in thickness and of the same cement-sand ratio as used in the concrete.

(d) **Lift in Concrete**. The permissible depth of concrete placed in one lift will be as shown in the detailed Drawings or as directed for each structure by the Engineer. Unless otherwise authorized or shown, lifts of mass concrete shall not exceed 1.5 meters in height, and a minimum of 72 hours shall elapse between the placing of each successive lifts. Lifts of three meters will be permitted in piers and walls. Height of lift specified herein will not apply where the use of slip form has been approved. All concrete, when placed and vibrated shall be approximately horizontal layers not to exceed 50 centimeters in thickness unless otherwise specifically authorized. The placement of concrete surfaces shall not have reached their initial set before additional concrete is placed thereon. Slabs shall generally be placed in one lift unless the depth is so great that this procedure will produce objectionable results.

(e) **Consolidation of Concrete**. Consolidation of concrete shall be by the use of mechanical vibratory equipment. The vibrating equipment shall be of the internal type and shall at all times be adequate in number of units and the power of each unit shall be capable to properly consolidate all concrete. The frequency of vibration shall not be less than 6,000 revolutions per minute. Form or surface vibrators shall not be used, unless otherwise specified in other Sections of this Technical Specifications. The duration of vibration shall be limited to that necessary to produce satisfactory consolidation without causing objectionable segregation. In consolidating each layer of concrete the vibrating head shall be allowed to penetrate under the action of its own weight and revibrate the concrete in the upper portion of the underlying layer.

At least one spare vibrator in working order shall be available at any location where concrete is being placed.

(f) **Finishing of Concrete Lift Surfaces**. The manipulation of the concrete adjacent to the surface of the lift in connection with completing lift placement shall be the minimum necessary to produce not only the degree of consolidation desired in the surface layer of concrete but also a surface with the desired degree of roughness for bond with the next lift. Surface vibration or excessive surface working will not be permitted. All unfinished top surface not covered by forms and which are not to be covered by additional concrete or backfill, shall be carried slightly above grade, as directed, and struck off by board finish.

(g) **Placing Concrete Through Reinforcement**. In placing concrete through reinforcement, care shall be taken so that no segregation of the coarse aggregate occurs. On the bottom of beams and slabs, where the congestion of steel near the forms makes placing difficult, a layer of mortar of the same cement-sand ratio as used in the concrete shall be first deposited to cover the surface.

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(h) **Depositing Concrete in Water**. When specifically authorized, concrete may be deposited in water. The methods and equipment used shall be subject to approval of the Engineer.

FORMS

(a) **General**. Forms shall be used wherever necessary to confine the concrete during vibration and to shape it to the required lines. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. The strength and rigidity of the forms shall be such that formed surfaces will conform to specification requirements relating to surface irregularities and tolerances for concrete construction. Forms shall be tight to prevent loss of mortar from the concrete.

Chamfer strips shall be placed in the corners of forms for exposed exterior corners so as to produce beveled edges. Interior corners and edges of formed joints shall not be beveled unless the requirement therefore is shown on the Drawings.

The tolerance limits specified in Paragraph 1521 and the surface irregularity limits specified in Paragraph 1521 are the maximum permissive limits of misalignment or irregularity surface which may occur despite workmanlike effort to construct and maintain the forms to the specified surfaces. These limits pertain only to inadvertent and occasional irregularities, even though these irregularities are within the maximum permissive limits, will be rejected. Accordingly, these limits, shall not be construed to be tolerances for aligning forms or determining acceptability of form materials.

Stub walls shall not be used, except that stub walls shall be used for walls having fillets at the bottom.

Concrete in such stub walls shall be re-vibrated after adjacent floor concrete is placed.

Forms for finishes F2 and F3 shall be constructed with grade strips at the horizontal construction joints, unless the use of groove strips is specified on the Drawings. Such forms shall be removed and reset from lift to lift, they shall be continuous from lift to lift. Sheathing of reset forms shall overlap the previous lift by not less than 25 mm. Forms shall be tightened against the concrete so that the forms will not spread and permit abrupt irregularities or loss of mortar or paste. Supplementary bolts or form ties shall be used as necessary to hold the rested forms against the concrete.

Forms for all wall openings shall be constructed so as to facilitate loosening.

(b) **Form Sheathing and lining**. Wood sheathing or lining shall be of such kind of quality and shall be so treated or coated that there will be no chemical deterioration or discoloration of the formed concrete surfaces. The type and condition of form sheating and lining, and the fabrication of forms for finishes F2, F3 and F4 shall be such that the form surfaces will be even and uniform. The ability of forms to withstand distortion

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caused by placement and vibration of concrete shall be such that formed surfaces will conform with applicable requirements of these specifications pertaining to finish of formed surfaces. Where finish F3 is specified, the sheathing or lining shall be placed so that the joint marks on the concrete surfaces will be in general alignment, both horizontally and vertically.

Plywood used for sheathing or lining shall be high density overlaid plywood specially manufactured for use in construction concrete forms as approved. Materials used for form sheathing or lining shall conform with the following requirements, or other materials producing equivalent results as approved by the Engineer.

Req'd Finish of Formed Surface	Wood Sheathing or Lining*	Steel Sheathing or Lining**
F1	Any grade, surfaced on 2 edges (S2E) with no limits to defects except imposed by other requirements of these specifications.	Steel Sheathing permitted Steel Lining permitted
F2	Selected lumber, surfaced on side and two edges (SIS2E) or plywood sheathing or lining.	Steel Sheathing permitted Steel Lining permitted
F3	Selected lumber, surfaced on four sides (S4S) or plywood sheathing or lining.	Steel Sheathing permitted Steel lining not permitted
F4	For plane surfaces, selected lumber surfaced on four sides (S4S) T & G or plywood. For warped surfaces, the lumber shall be free from knots and other imperfections and which can be cut and bent accurately to the required curvatures without splintering or splitting.	Steel sheathing permitted.

* The lumber shall be free from warp and knotholes and shall have no knots larger than five centimeters in diameter. All knots shall be sound and tight. There will be no pitch pockets, barb or lack of wood on the face of the lumber against which concrete is to be placed.

** Steel sheathing denotes steel sheets not supported by a backing of wood boards.

(c) **Form Ties.** Embedded ties for holding forms shall remain embedded and, except for F1 finish, shall terminate within the concrete approximately two diameters or twice the minimum dimensions of the tie from the formed faces of the concrete. Embedded ties for F1 finish shall terminate within the concrete or shall be cut-off flush with the faces of the concrete, at the Contractor's option.

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The ties shall be so constructed that ends and end fasteners can be removed by unskilled workmen without causing spalling at the faces of the concrete.

(d) **Cleaning and Oiling of Forms**. The surfaces of the forms in contact with the concrete shall be free from encrustations of mortar, grout or other foreign material when the concrete is placed. The surfaces of the forms to be in contact with the concrete shall be coated with an approved coating which will enable the ready release of the forms and will not contaminate the concrete surfaces. Except as provided below, forms for surfaces which are to be painted shall be coated with straight, refined, pale, paraffin mineral oil, or other approved coating, and the coating for steel forms shall consist of refined mineral oil suitably compounded for the purpose.

(e) **Forms of Curved Surfaces**. Curved surfaces have been dimensioned at several sections. The Contractor shall interpolate intermediate sections as necessary and shall construct the forms so that the curvature will be continuous between sections. Where necessary to meet requirements for curvature, the form lumber shall be built up to laminated splines cut to make tight, smooth form surfaces. The forms shall be constructed so that the joint marks on the concrete surfaces generally will follow the line of water flow. After the forms have been constructed, all surface imperfections shall be corrected, and all surface irregularities at packing faces of form materials shall be dressed to the specified curvature.

(f) **Forms for Slopes or Battered Surfaces**. Forms for sloped or battered surfaces shall be built so that the sheathing can be placed board-by-board immediately ahead of concrete placement so as to enable ready access for placement, vibration, and inspection of the concrete. The sheathing shall be built so that the sheathing can be removed board-by-board from the bottom to top.

(g) **Forms for Open Channel Transitions.** When warped surfaces of transitions are not backformed, natural or compacted earth shall be shaped to the specified surface and covered immediately with a plaster coat of cement-sand mortar at least 0.95 centimeter.

Forms for the warped surfaces shall be tied securely to the floor slab and braced against spreading. In the upper surface, forms shall be butt and removed as specified in sub-paragraph (j), so as to enable ready access for placement, vibration, inspection, and repair and finishing of the concrete.

(h) **Forms for Bridges**. Forms for girders and slabs shall be cambered as specified by the Engineer.

Forms shall be constructed so that form marks will conform to the general lines of the structure. Column form marks shall be spaced symmetrically.

Form bolts or clamps shall be used to fasten forms. The use of ties consisting of twisted wire loops will not be permitted. Bolts or clamps shall be positive in action and

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shall be of sufficient strength and number to prevent displacement of the forms. They shall be of such type that they can be entirely removed or cut back one inch or more below the finished surface of the concrete leaving no metal within one inch of the concrete surface. All forms for the outside surfaces shall be constructed with rigid wales at right angles to the studs and all form clamps shall extend through and fasten such wales.

Forms for exposed surfaces shall be constructed of plywood or material which will produce an equivalent surface. Form panels shall be furnished and placed in uniform widths of not less than 90 centimeters and in uniform lengths of not less than 1.8 meters, except where the dimensions of the member formed are less than the specified panel dimensions. Plywood panels shall be placed with the grain of the outer piles perpendicular to the studding of joists, unless otherwise permitted by the Engineer. Where form panels are attached directly to the studding or joists, the panels shall not be less than 1.6 centimeters thick, and the studding or joists, shall be spaced not more than 30 centimeters center to center. Form panels less than 1.6 centimeters thick, which otherwise conform to the requirements specified in this Paragraph, may be used with a continuous backing of surfaced material 1.9 centimeters thick. Form panels more than 1.6 centimeters thick attached to studding or joists spaced at 30 centimeters center to center may be used, provided the deflection of the panel between studding or joists does not exceed that of a 1.6 centimeters panel attached to a studding or joists spaced at 30 centimeters center to center. All form panels shall be placed in a neat, symmetrical pattern subject to the approval of the Engineer.

(i) **Falsework for Bridges and Other Superstructures**. False work for the support of a bridge or other superstructure shall be designed and constructed to support the loads that would be imposed where the entire structure placed at one time.

Suitable jacks, wedges or camber strips shall be used in connection with falsework or centering to set the forms to the required grade or camber and to take up any settlement in the formwork either before or during the placing of concrete.

(j) **Forms for Large Circular Siphons**. The Contractor shall submit to NIA a detailed Drawings for a collapsible steel forms to be used as inner forms of the monolithic barrels. The length of one section of the barrels is at every 9.15 meters bar length intervals as shown on the Drawings. The outer forms intervals as shown on the Drawings. The outer forms of the concrete barrels shall be made with butt joints throughout and form surfaces to be in contact with concrete shall be smooth and true. All forms shall be sufficiently tight with suitable gaskets provided at all form joints and gates to prevent leakage of mortar. Forms shall be braced and sufficiently stiff to withstand, without detrimental deformation, all operations incidental to the proper placement of concrete within the forms. All forms shall be cleaned and oiled before pouring concrete.

(k) **Removal of Forms**. Forms shall be removed as soon as possible to enable the earliest practicable repair of surface imperfections, but in no case shall they be removed before approval of the Engineer. Any needed repair or treatment shall be performed at

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once, and be followed immediately by the specified curing. Forms shall be removed with care so as to avoid injuring of the concrete and any concrete so damage shall be repaired.

In field operation that are not controlled by beam or cylinder test the removal of forms and supports shall be governed by the following:

Type of Structure	Time of Removal After the Last Pouring
Arch, beam, girders and slabs	14 days
Slab in close span of less than three meters	7 days
Side forms for beams, railings parapets, balustrade, walls and columns	Not less than 12 hours and more than 48 hours

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CONSTRUCTION JOINTS

(a) **General**. After the top surface of a lift is finally compacted, it shall be immediately and carefully protected from direct rays of the sun, pedestrian traffic, materials being placed thereon, running water, heavy rains, or any activity upon the surface that in any manner will affect the setting of the concrete. Unless otherwise specified, vertical and horizontal joints on exposed faces shall be chamfered as shown on standard detailed drawings and formed to produce a uniform and neat appearance.

(b) **Cleaning**. Horizontal construction joints on lifts with relatively open and accessible surfaces may be prepared for receiving the next lift by either wet sand blasting or by cutting with an all-water jet, as specified below. If the surface of the lift is congested with reinforcements, or is relatively inaccessible or, if for any other reason the Engineer considers it undesirable to disturb the surface of a lift before final set has taken place, surface cutting by means of air-water jets will not be permitted and the use of wet sand blasting or light brush hammering will be required. After approved cleaning, the surface of the construction joints shall be kept continuously wet for at least 12 hours immediately prior to placing concrete. A mortar coating of approximately one centimeter in thickness shall be applied to all approximately horizontal surfaces immediately prior to the placing of the next lift of concrete. The mortar shall have the same cement sand ratio as the concrete. Any free water on the joint surface shall be removed prior to placing the mortar. The Contractor shall ensure that the surface of any horizontal joints (and the formwork in general) is completely clean of any dust, weed, wood showings or other deleterious material prior to the placing of concrete.

1. **Air-Water Cutting** - Air-Water cutting of construction joint shall be performed after initial set has taken place but before the concrete has obtained its final set. The surface shall be cut with a high pressure air-water jet to remove all laitance and expose clean, sound aggregate, but not to undercut the edges of the larger particles of aggregate. After cutting, the surface shall be washed and rinsed as long as there is a trace of cloudi- ness of the wash water.

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2. **Wet Sandblasting**. When employed in the preparation of construction joints, wet sandblasting shall be performed immediately before placing the following lift. The operation shall be continued until all unsatisfactory concrete and laitance, coatings, stain, debris, and other foreign materials are removed. The surface of the concrete shall then be washed thoroughly to remove all loose materials.

3. **Cleaning Vertical Construction Joint**. The vertical construction joints shall be cleaned by wet sand blasting or by brush manner.

REPAIR OF CONCRETE

No repair of work or plaster finish of formed concrete in structures will be permitted, unless otherwise provided in these Specifications or directed by the Engineer in writing. All defective concrete shall be removed and replaced with the Contractor assuming all expenses and losses. Plastering without permission will be assumed as defective works. If directed, the Contractor shall notify the Engineer of the start of the repair work at least 24 hours in advance thereof and shall repair concrete only in the presence of the Engineer or its authorized representative, unless inspection of such repair work is waived.

Drypack shall be used for filling holes having at least one surface dimension smaller, if any greater than the hole depth; for narrow slots cut for repair of cracks for grout pipe recesses; and for tie-rod fastener recesses as specified. Drypack shall not be used for filling behind reinforcement or for filling holes that extend completely through a concrete section. Mortar filling, placed under impost by use of a mortar gun, maybe used for repairing defects on surfaces designated to receive F1 and F2 finishes where the defects are too wide for drypack filling and too shallow for concrete filling and no deeper than the far side of the reinforcement that is nearest the surface. Concrete filling shall be used for holes extending entirely through concrete sections; for holes in which no reinforcement is encountered and which are greater in area than 900 square centimeters and deeper than 20 cm.; and for holes in reinforced concrete which are greater in area than 400 square centimeters and which extends beyond reinforcement.

Workmanship methods, preparation of concrete for repair, materials, and curing shall be as directed. Only workmen skilled in the repair of concrete shall perform such work. Repairs of defective concrete shall be made within 48 hours after removal of forms.

Surfaces to which concrete is to be bonded shall be clean and dry when coated with epoxy.

Surfaces of concrete to be repaired with sealing compound method shall be cured by the water curing method for one day before application of the sealing compound. All

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repair shall be sound and free from shrinkage cracks and drummy areas after they have been cured and have dried 30 days.

Surfaces of repairs which will be exposed to view shall blend inconspicuously with surrounding concrete surfaces.

Fins and encrustations shall be removed from surfaces which will be exposed to view.

FINISHES AND FINISHING

(a) **General**. Allowable deviations from established lines, grades and dimensions are set forth in Paragraph 1521. These allowable deviations are defined as "tolerance" and are to be distinguished from surface irregularities in finish as described herein. The class of finish and the requirements for finishing concrete shall be as specified in this Paragraph.

Finishing of concrete surfaces shall be performed only by skilled workmen. The Contractor shall advise the Engineer as to when concrete will be finished. Unless inspection is waived in each specific case, finishing of concrete shall be performed only in the presence of the Engineer. Concrete surfaces will be tested by the Engineer to determine that surface irregularities are within the limits hereinafter specified.

Surface irregularities are classified as "abrupt" or "gradual". Offsets caused by displaced or misplaced form sheathing or lining or form sections or by loose knots in forms or otherwise defective form lumber will be considered abrupt irregularities, and will be tested by direct measurements. All other irregularities will be considered to be gradual irregularities, and will be measured as the departure from the testing edge of an approved template held parallel to and in contact with the surface. The template shall consist of a straight-edge or the equivalent thereof for curved surfaces.

(b) **Formed Surfaces**. The classes of finish for formed concrete surfaces are referred to by symbols F1, F2, F3 and F4 faces. Grinding will not be required on formed surfaces except as necessary to reduce protrusions to specified limits. Recesses from removal of form ties shall be filled with dry pack or epoxy mortar at the Contractor's option: except that filling recesses in Finish F1 surfaces will be required only if the recesses are deeper than 2.5 centimeters in walls, less than 30 centimeters thick or if unfilled, recesses would reduce the required cover over reinforcements.

The filled recesses shall blend inconspicuously with the surrounding concrete surfaces or concrete that will be exposed to view.

The classes of finish and their application are as follows:

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Finish F1 - Finish F1 applies to formed surfaces where fill material or concrete is to be placed. The surfaces require no treatment after form removal except for repair of defective concrete and specified curing. Correction of surface irregularities will be required only for depressions which exceed 2.5 centimeters, when measured as described in sub-paragraph (a).

Abrupt irregularities on surfaces to which pre-molded joint filler is to be applied shall not exceed 0.30 centimeter.

Finish F2 - Finish F2 applies to all formed surfaces not permanently concealed by fill materials or concrete, or not required to receive Finish F3. Surface irregularities, measured as described in sub-paragraph (a) shall not exceed 0.60 centimeter for abrupt irregularities and 1.20 centimeters for gradual irregularities.

Finish F3 - Finish F3 applies to formed surfaces of the stoplog guides, exposed faces of abutments, wing walls, girders, curbs, parapet railings, and decorative features on bridges. Surface irregularities, measured as described in sub-paragraph (a) above, shall not exceed 0.60 centimeter for gradual irregularities and 0.30 centimeter for abrupt irregularities, except that abrupt irregularities will not be permitted at construction joints.

Finish F4 - Finish F4 applies to formed surfaces for which accurate alignment and evenness of surfaces are of paramount importance from the standpoint of eliminating destructive effects of high velocity flows. Formed surfaces to receive an F4 finish includes formed surfaces exposed to high velocity flowing water.

Except as hereinafter provided, abrupt irregularities on surfaces to receive F4 finish, when measured as described in sub-paragraph (a), shall not exceed 0.60 centimeter for irregularities parallel to the direction of the flow and 0.30 centimeter for irregularities not parallel to the direction of the flow. Gradual irregularities on surfaces to receive an F4 finish shall not exceed 1.60 centimeters.

Abrupt irregularities on formed surfaces exposed to high velocity flows shall be eliminated by grinding on a bevel of 1:20 ratio of height to length.

The Contractor will not be entitled to any extra payment or compensation for reducing or eliminating irregularities on formed concrete surfaces which do not meet specification limits.

(c) Unformed Surfaces - The classes of finish for unformed concrete surfaces are referred to by symbols U1, U2, U3, or U4. Exterior surfaces will be sloped for drainage where shown on the Drawings or as directed by the Engineer. Exterior surfaces which otherwise would be level shall be sloped for drainage. Unless the use of other slopes or level surfaces is indicated on the Drawings or directed by the Engineer narrow surfaces,

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such as tops of walls and burbs, shall be sloped approximately 3 centimeters per meter of width; broader surfaces, such as walks, roadways, platforms, and decks shall be sloped approximately 2 centimeters per meter. These classes of finish and their applications are as follows:

Finish U1 - Finish U1 (screeded finish) applies to unformed surfaces that will be covered by fill material or by concrete. Finish U1 is also used as the first stage of finishes U2 and U3. Finishing shall consist of sufficient leveling and screening to produce even uniform surfaces. Surface irregularities, measured as described in sub- paragraph (a) shall not exceed 0.60 centimeter.

Finish U2 - Finish U2 (floated finish) applies to unformed surfaces not permanently concealed by fill material or concrete, or not required to receive finishes U3 and U4. Finish U2 is also used as the second stage of finish U3. Floating may be performed by use of hand or power driven equipment. Floating shall be started as soon as the screeded surface has stiffened sufficiently, and shall be the minimum necessary to produce a surface that is free from screed marks and is uniform in texture. If finish U3 is to be applied, floating shall be continued until a small amount of mortar without excess water is brought to the surface, so as to permit effective trowelling. Surface irregularities measured as described in sub-paragraph (a), shall not exceed 0.60 centimeter.

Finish U3 - Finish U3 (trowelled finish) applies to inside floors of buildings. When the floated surface has hardened sufficiently to prevent excess of fine material from being drawn to the surface, steel trowelling shall be started. Steel trowelling shall be performed with firm pressure, so as to flatten the sandy texture of the floated surface and produce a dense uniform surface, free from blemishes and trowel marks. Surface irregularities, measured as described in sub-paragraph (a), shall not exceed 0.60 centimeter.

Finish U4 - Finish U4 applies to canal lining. The finished surface shall be equivalent in evenness, smoothness and freedom from rock pockets and surface voids to that obtainable by effective use of a long-handled steel trowel. Light surface fitting and light trowel marks will not be considered objectionable. Surface irregularities measured as described in sub-paragraph (a), shall not exceed 0.60 centimeter for bottom slabs and 1.20 centimeter for side slopes.

(d) Moisture Control for Unformed Surfaces - In warm, dry or windy weather the moisture control measures specified herein shall be taken to inhibit loss of moisture from the surface of the concrete. Such surfaces shall be fog-sprayed, covered completely with white polyethylene sheet, or otherwise treated as approved. The curing specified in Paragraph 1520 shall be started as soon as the concrete hardens, however, the surface of the concrete shall be kept wet during the change in curing methods.

If surfaces are fog sprayed, the fog spray shall maintain a sheet of moisture on the concrete but shall not displace cement or create a wet surface during finishing operations.

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Surfaces shall be fog sprayed during and immediately following finishing operations, and fog spraying shall be interrupted only to enable finishing operations. Such interruptions shall be of minimum duration and shall occur only in the immediate area being finished.

Plastic shrinkage cracks which occur before the concrete hardens shall be closed. Shrinkage cracks shall be closed by working; cracks shall not be sealed by trowelling only.

CURING

(a) **General**

All concrete except interior surfaces, shall be cured for a period of not less than 14 consecutive days.

All horizontal slabs or surfaces shall be cured by water curing in accordance with sub-paragraph (c) and all inclined or vertical surfaces of concrete shall be applied with membrane curing immediately after removal of forms to prevent dehydration in accordance with sub-paragraph (b) except that membrane curing shall not be allowed for mass concrete and for construction joints. Contractor shall have all equipment needed for adequate curing and protection of the concrete on hand and ready for use before actual concrete placement begins. The curing medium and method or the combination of mediums and methods used shall be subject to the approval of the Engineers.

(i) Floors, stair threads, and horizontal construction joints shall be cured for 14 days by a covering of damp sand or curing mats, except that curing of construction joints surfaces may be discontinued in less than 14 days when the surfaces are to be covered with fresh concrete. The sand or curing mats shall not be kept so wet as to allow water to drain from it and stain concrete walls. The sand or curing mats shall be removed after the expiration of the curing period.

(ii) Interior Surfaces

Concrete surfaces of interior walls, including ceilings and surfaces of construction joints and vertical construction joints will require no curing other than resulting from forms being left in place for at least two days. Interior walls shall be washed during and after completion of concrete operations at higher elevations. The washing shall be sufficient to keep the walls free from drips or runs of material that would cause streaking or staining of the concrete. Stair risers and large repairs on interior walls shall be cured for at least four days by damp mats but the mats shall not be wet enough to cause dripping of water on completed concrete. Small repairs and filled core holes on interior walls shall be cured for at least four days by masking tape or similar covering.

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(b) **Membrane Curing Method**.

The concrete shall be sprayed uniformly with sealing compound in accordance with the manufacturer's written recommendation, copies of which shall be furnished to the Engineer for approval in advance of the material being used. The sealing compound shall conform to AASHO Designation: M-148, Type II. The component shall be of uniform consistency and quality within each container of each shipment and from shipment to shipment. Sealing compound used in confined spaces shall not be toxic to workmen. The Contractor shall furnish a manufacturers certificate of compliance for the compound prior to its use on the work. The certificate shall identify the batch and include certified test results covering all requirements of the specifications for the sealing compound material.

Sealing compound shall be applied to unformed concrete surfaces immediately upon completion of moisture control measures taken as specified in Paragraph 1519 (d). Where such measures are not required, sealing compound shall be applied as soon as the concrete is hard enough to preclude damage from application of the sealing compound. The Engineer will require that the side slopes and bottom of the canal lining be sprayed separately unless the surfaces are ready, simultaneously, to receive the sealing compound.

Sealing compound shall be applied to formed concrete surfaces immediately upon removal of the forms as specified in Paragraph 1516. The moisture control measures shall be taken until the forms have been removed. Formed surfaces shall be sprayed with water immediately after the forms have been removed until the surfaces are saturated. The sealing compound shall be applied as soon as the surface film or water has disappeared but while the surface is still damp.

Sealing compound shall be applied in one coat to provide a continuous uniform membrane. Special care shall be taken to ensure coverage of edges, corners, and rough spots of formed surfaces. The compound shall be agitated continuously in the spray pressure tank.

Concrete repair work shall be performed after the sealing compound has been applied and is dry to touch. In the event that application of sealing compound is delayed or interrupted, water shall be applied as approved, until application of sealing compound is started or resumed.

Any membrane that is damaged or is determined to be defective within 28 days after application shall be repaired or replaced without delay, as approved. If the Contractor's operations require traffic on coated surfaces, the membrane shall be pro- tected from damage.

Payment for membrane curing shall be included in the contract unit price for concrete in the Bill of Quantities where they are required.

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(c) **Water Curing**

Water curing shall start as soon as practicable after placement of the concrete and shall continue until completion of the specified curing period or until covered with fresh concrete. Concrete, if cured by water, shall be kept wet by ponding method or by covering with an approved water saturated materials, or by a system of perforated pipes, mechanical sprinklers, porous hose, or by any other methods approved by the Engineer which will keep all surfaces to be cured continuously (not periodically) wet.

Water used for curing shall be free of chemicals which may have an adverse effect on the concrete. For example, water containing sulfates or chlorides is not acceptable.

TOLERANCES FOR CONCRETE CONSTRUCTION

(a) **General**. Permissible surface irregularities for the various classes of concrete surface finish, specified in Paragraph 1519 are defined as "finishes", and are to be distinguished from tolerances that are consistent with modern construction practice, yet governed by the effect that permissible deviations will have upon the structural action or operational function of the structure. Deviations from the established lines, grades and dimensions will be permitted to the extent set forth herein.

Where tolerances are not stated in the Specifications or Drawings for any individual structure or feature thereof, permissible deviations will be interpreted in conformity with the provisions of this paragraph. Concrete work that exceeds the tolerance limits specified will be rejected and shall be corrected or removed and replaced, as ordered.

(b) **Tolerance for Canal Structure**

1. Concrete canal lining:

   Departure from established alignment

   - 5 cm. on tangents
   - 10 cm. on curves

   Departure from established profile grade

   - 2.50 cm.

   Reduction in thickness of lining:

   10 per cent of the specified thickness; provided that the average of all thickness measurements made in 40 meters of lining shall be not less than the specified thickness, and provided further that the quantity of concrete actually used in 40 meters of lining shall be not less than the theoretical quantity, based on the lines shown on the Drawings.

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Variation from specified width of section at any depth	-	3 cm.
Variation from established depth of lining	-	3.7 cm.
Variation in surface:		
Invert, in 3 meter	-	0.60 cm.
Side slopes, in 3 meter	-	1.20 cm.

2. Bridges, inlets, chutes and structures:

Departure from established alignment	-	1.20 cm.
Departure from established grades	-	1.20 cm.
Variation from the plumb or the specified batter in the lines and surfaces of columns, piers, walls and in arises:		
Exposed in 3 meters	-	1.20 cm.
Backfilled in 3 meters	-	2.00 cm.
Variation in cross-sectional dimensions of columns, walls, piers, slabs, beams and similar parts		
Minus	-	0.60 cm.
Plus	-	1.20 cm.

3. Bridge Slabs:

Variation in thickness of slab:		
Minus	-	0.30 cm.
Plus	-	0.60 cm.
Variations from specified width over curbs	-	0.60 cm.
Variations from specified grade of top of curb in cambered position	-	0.60 cm.

4. Foundations:

Variations in dimensions in plan:		
Minus	-	2.50 cm.
Plus	-	5.00 cm.
Variations from established grade:		
Minus	-	1.20 cm.
Plus	-	2.00 cm.
Misplacement of eccentricity:		
2 percent of the footing width in the direction of misplacement but not more than	-	5.00 cm.

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5. Bridge Seats:

Variation of any one bearing from established elevation	-	0.30 cm.
Difference in elevations of bearings for adjacent spans, maximum	-	0.60 cm.
Difference in elevations of bearings for zone span on any one pier, maximum	-	0.30 cm.
Horizontal misplacement for any one bearing, maximum	-	0.70 cm.
Variation in the sizes and locations of slabs and wall openings	-	1.20 cm.
Skills and side walls for radial gates and similar watertight joints:		
Variation from the plump level		not greater than 0.30 cm. in 3 meters

6. Stop Log Slots:

Variation from a common plane between the sealing surfaces of each pair of related stop log slots shall be no greater than	-	0.15 cm.
Variation of widths of stop log guides:		
Minus	-	0.30 cm.
Plus	-	0.60 cm.

(c) **Tolerances for Cast-In-Place Concrete Pipe**:

Departure from established alignment or from established grade	-	2.50 cm.
Variation in thickness at any point:		Minus 2-1/2% or 0.60 cm. whichever is greater Plus 5% or 1.20 cm. whichever is greater
Variation from inside diameter	-	0.5%
Variation in surface invert	-	0.60 cm. in 3 meters

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(d) **Tolerances for Placing reinforcement steel**:

Variation from indicated protective cover:

For 5 cm. cover	-	0.60 cm.
For 7.5 cm. cover	-	1.20 cm.
Variation from indicated spacing	-	2.50 cm.

FAILURE TO CURE

The Engineer shall have the authority to suspend the work whole or in part, by written order, for such period as he may deem necessary for failure on the part of the Contractor to perform proper curing of the concrete work and to withhold payment for the corresponding work pending results of test, that shall subsequently be made on these concrete works. The Contractor shall immediately secure core samples of such members and from parts of the structure as shall be designated by the Engineer and shall have them tested in a Testing Laboratory approved by the NIA. If the results of tests are found satisfactory, payment of the concrete in question shall be made and the work ordered resumed, but if the results of test are unsatisfactory to meet the structural requirements, the Contractor shall remove, wholly or partly, the concrete work in question at the discretion and upon written order of the Engineer and the Contractor shall replace such parts at his own expense.

FAILURE TO MEET CONCRETE REQUIREMENTS

All concrete designed, prepared and placed by the Contractor for bridges that fails to meet the specified strengths shall be removed and replaced by the Contractor at his own expense. For other structures, concrete that fails to meet the specified strengths may be accepted provided the Contractor shall pay as liquidated damages the amount based on the following schedule:

Percent (%) lower than the specified strength	Reduction in Price per cu.m. of Concrete
Up to -5	less 10% of contract unit price
Above -5 to -10	less 20% of contract unit price
Above -10 to -20	less 30% of contract unit price

Concrete for all structures other than bridges which are more than twenty percent (20%) lower than the specified strength shall be removed and replaced by the Contractor at his own expense.

PROTECTION OF CONCRETE WORKS

The Contractor shall protect all concrete against injury until final acceptance by the NIA. Final acceptance shall be construed to mean acceptance of the whole work after the Contract has been completed or satisfactory terminated.

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SECTION VI

REINFORCING STEEL BARS

SCOPE

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Engineer shall be furnished by the Contractor.

The work under this Section includes the hauling of all reinforcing steel bars required for the works to the project site, storing, cutting, bending and proper placing, all in accordance with the drawings and these Specifications.

The length for each size of reinforcing steel bar to be furnished by the Contractor shall be computed by taking the theoretical length of steel bars shown on the drawings multiplied by 1.07 to get the approximate length required for the work. All reinforcing steel bars shall be furnished in commercial standard lengths and the Contractor shall cut and bend the reinforcing steel bars to the detail and dimensions shown on the Drawings.

MATERIALS

All reinforcing steel bars to be furnished by the Contractor shall be Grade 40 or PNS 275. The nominal dimensions and unit weights of bar designation shall be in accordance with the following table:

		Nominal Dimensions	
Nominal Bar Diameter	Unit Weight (kg/m.)	Cross Section Area (sq.mm.)	Perimeter (mm.)
6 mm.	0.222	28.27	18.85
8 mm.	0.395	50.27	25.13
10 mm.	0.616	78.54	31.42
12 mm.	0.888	113.10	37.70
16 mm.	1.579	201.10	50.27
20 mm.	2.466	314.20	62.83
25 mm.	3.854	491.90	78.54
28 mm.	4.833	615.75	87.96
32 mm.	6.313	804.25	100.53
36 mm.	7.991	1,017.90	113.10

The nominal diameter of a deformed bar is equivalent to the diameter of a plain bar having the same weight per unit length of the deformed bar.

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CONSTRUCTION REQUIREMENT

Workmanship shall be at the highest grade and shall be in accordance with the latest standard practice of the industry.

1. **Cutting and Bending**. Cutting and bending of reinforcing bars may be done in shop or at the job site. All bending works shall be in accordance with the latest standard practice and by approved machine methods. Radii for bends and hooks will be specified on the approved detailed reinforcement Drawings in accordance with sound design procedures.

2. **Placing.** Reinforcement shall be laid, anchored and embedded in the concrete as shown on the Drawings or as directed by the Engineer. Unless otherwise directed, the spacing of reinforcement bars shall be measured along the center line of the bars. Reinforcement shall be inspected for compliance with requirements as to size, length, splicing, position and number after placement based on the approved reinforcement drawings.

Before reinforcement are placed, the surfaces of the bars and the surfaces of any metal bar support shall be cleaned of heavy flaky rust, loose scales, dirt, grease or other foreign substance which, in the opinion of the Engineer, are objectionable. Heavy flaky rust that can be removed by firm rubbing with burlap or equivalent treatment is considered objectionable. After being placed, the reinforcing bars shall be maintained in a clean condition until completely embedded in concrete.

Reinforcing bars shall be accurately placed and secured in position so as to avoid displacement during the pouring of concrete. Special care shall be exercised to prevent any disturbance of the embedded reinforcement during the setting of concrete. Metal chairs, hangers, spacers or other approved support may be used by the Contractor for supporting reinforcing bars. Metal supports shall be galvanized when they are to be exposed to view on completed concrete surfaces or where it is use will contribute in any way to the discoloration or deterioration of the concrete.

3. **Relation of Bars to Concrete Surfaces**. The minimum cover for all reinforcements shall conform to the dimensions shown on the detailed reinforcement Drawings.

4. **Splicing.** All splices in reinforcement shall be as shown on the Drawings or as directed by the Engineer. The lapped ends to bars shall be either supported sufficiently to permit the embedment of the entire surface of each bar in concrete or shall be securely wired.

5. **Welding.** Welding of bars shall be performed only where shown on the Drawings or as authorized in writing by the Engineer and shall conform to the requirements of AWS: D12.1, latest revision. All welders employed shall show proof of their welding qualifications to the Engineer. All welding shall be done using metal arc

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welding, pressure gas welding, submerged arc welding or thermit welding. All electric shall be acceptable to NIA. Coverings of low hydrogen electrodes must be thoroughly dry when used. The surfaces to be welds shall be clean and shall be free from rust and dirt. All welds shall develop the full strength of the bar or the smaller bar when two different sizes are welded. Test will be required of not more than five percent of the welds. Approved testing equipment for testing welds shall be furnished by Contractor.

6. **Protection.** Reinforcement to remain exposed and intended for future concrete embedment shall be protected from corrosion or other damages in an approved manner where directed. The reinforcement protection shall be of such nature that it can be thoroughly cleaned without difficulty prior to encasement in concrete.

PREPARATION OF REINFORCEMENT DRAWINGS

Contractor shall submit for the approval of NIA detailed reinforcement drawings in accordance with Article GC-47. These drawings will include bar-placing drawings, bar bending drawings, bar list, and any other reinforcement drawings as may be required to facilitate placement and checking of reinforcing bars. No work shall be done by contractor until such approval has been secured from NIA.

The Reinforcement Drawings submitted shall show the name of the structure location by stationing where the reinforcement drawings is intended and all the necessary informations required by NIA. It shall likewise bear the stamp or seal of Contractor as evidence that the Drawings have been checked by Contractor.

Contractor shall be held responsible for any delay in the progress of the work occasioned by his failure to observe the requirements and the time for the completion of the contract will not be extended on account of his failure to promptly submit said drawings in strict adherence herewith.

SAMPLING FOR TESTING AND ACCEPTANCE OF MATERIALS THAT FAIL TO MEET CONTRACT REQUIREMENTS (FOR STEEL BARS FURNISHED BY CONTRACTOR)

Sampling of reinforcing steel bars furnished by the Contractor for incorporation in the Permanent Works shall be carried out by NIA at the manufacturer's stockyard before delivery to the project site. The NIA authorized representative shall, at random, take two representative samples of reinforcing steel bars per lot covered by the manufacturer's mill certificate. A lot shall consist of all steel bars of the same heat or blow as shown in the mill certificate, and the same nominal cross-section and grade. Samples shall be tested at the manufacturer's testing laboratory, if any, or to any approved Government testing laboratory at Contractor's expense. A lot or lots represented by samples tested which failed to meet specified requirements shall be rejected and will not be counted for delivery to the project site. Sampling and testing shall be in accordance with ASTM requirements. All deliveries shall be subject to prior approval of NIA.

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The NIA reserves the right to accept steel bars that fail to meet the contract requirement provided that the deficiency is not more than nine percent (9%) of the requirement per each type of test and provided further that a corresponding reduction in the unit price will be made. The percentage of reduction equal to the percentage of deficiency based on the minimum requirement of the ASTM A-615 Standard. For example, if the value of the test result for one type of test is five per cent (5%) below the minimum requirement, the unit price for payment will be reduced by 5%. If the non- compliance with the test requirements is on two or more tests, the price reduction will be the summation of the percentage of the deficiencies.

METHOD OF MEASUREMENT

A. Furnishing and Stockpiling

Measurement for payment for the furnishing and stockpiling of reinforcing steel bars shall be made on the actual deliveries to the project site and after presentation of the following documents:

a) Delivery receipt duly acknowledged by the Engineer and the Project Auditor or their duly authorized representatives

b) Manufacturer's certificate showing the details of manufacture, composition and physical properties of the steel bars.

c) Certificate of acceptance by the Engineer of the actual quantity delivered at the site

B. Cutting, Bending and Placing

Measurement for payment of reinforcing steel bars will be made on the weight of reinforcing steel bars actually placed with the concrete structure and drilled holes for anchorage in accordance with the Drawings and Bar Schedule approved by NIA or as directed by the Engineer and weights will be computed based on the published manufacturer's weights or in the absence thereof, on the weights specified in the table presented in Paragraph 2302. Steel bars in laps or splices indicated in the approved reinforcement Drawings, as required by NIA will be measured for payment. Additional steel bars in laps which are authorized for the convenience of the Contractor and such items as wires, clips, chairs, or other devices for securing the steel bars in place will not be measured for payment. Where weld splices are specified on the Drawings, weld splices will not be measured for payment but the weight for its equivalent lap splices will be measured for payment instead. Where contractor chooses to weld reinforcement bars for his convenience and welding is not specified, no separate payment will be made for such welds. Where Contractor substitute welded splices for lapped splices, separate payment will not be made for such welds, but instead the weight for the lapped splices shown on the Drawings will be measured for payment.

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BASIS OF PAYMENT

Payment for reinforcing steel bars measured as provided above, will be paid for at the contract unit price per kilogram which price and payment shall constitute full compensation for furnishing all labor, tools, equipment and all incidentals and subsidiary works necessary for the successful completion of the work described under this Section.

As indicated in the Bill of Quantities, payment per kilogram of reinforcing steel bars (same measurement as provided above) shall be made separately and in accordance with the following schedule:

a) Ninety percent (90%) of furnishing and delivery cost which shall include all labor, tools, equipment and supplies involved in the manufacture, and delivery to the project site which includes loading, hauling, unloading and stockpiling at the delivery site;

b) Ten percent (10%) of furnishing and delivery cost shall be paid upon successful completion of the works under this Section.

b) installation cost which shall include all labor, tools and equipment involved in cutting, bending and placing into permanent structures and all incidentals necessary for the successful completion of the work under this Section.

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SECTION VIII

GRAVEL BLANKET

SCOPE

The work under this Section shall include furnishing, placing on approved subgrade and compacting the graded sand and gravel to the thickness indicated on the Drawings or as established by the Engineer.

If required on the drawings, the furnishing and installation of filter fabric shall also be included in this Section.

MATERIALS

Materials for the gravel blanket shall meet all the requirements for 50 mm coarse aggregate specified in paragraph 1507.

PLACING

The material shall be dumped on the prepared subgrade and spread in layers having an uncompacted thickness of not more than 25 centimeters. Each layer shall be compacted to achieve a relative density of 70% as determined by USBR Test E-12 by four complete passes of a vibratory compactor. The Contractor has the option to adopt any method of compacting the layers of materials approved by the Engineer.

If filter fabric is required on the drawings, the Contractor shall install or lay said fabric on prepared subgrade prior to dumping of materials.

METHOD OF MEASUREMENT

Gravel Blanket will be measured by the cubic meter of materials acceptably placed and computed based on the neat lines and dimensions shown on the Drawings.

If materials placed by the contractor are more than what is required, the excess materials will not be measured for payment.

Filter fabric shall be measured separately and shall be paid in accordance with the provisions of Section XXIX, Filter Drain.

BASIS OF PAYMENT

The volume measured as provided above shall be paid at the unit contract price per cubic meter, which price and payment shall constitute full compensation for furnishing all materials, supplies, labor, tools, equipment and all incidentals or subsidiary works necessary for the successful completion of the work described under this Section.

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Excavation involved under this Section is not considered a subsidiary work, hence it will not be measured for payment under this Section. Rather, it will be measured and paid for under Structure Excavation.

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SECTION IX

STEEL SHEET PILING

SCOPE

The Contract work calls for the fabrication, supply, delivery and installation supervision of steel sheet piles including all accessories and field painting all in accordance with these specifications and the drawings:

MATERIALS

All materials and equipment to be incorporated in the works shall conform to the latest applicable standards and specifications as specified in the Contract Documents or to approved equivalent applicable standards and specifications established and adopted in the country of manufacture of the materials and equipment.

Reference to standards and specifications or to materials shall be considered as followed by the words "or equivalent". Contractor may propose equivalent standards, specifications and materials which shall conform to that specified.

If Contractor proposes equivalent standards and specifications or equivalent materials, Contractor shall state the exact nature of the change, and shall submit complete standards and specifications of the materials for the approval of NIA.

Such submittals shall be along with the bid and failure to do so, or purchase of any proposed equivalent materials prior to approval of NIA, will be at the Contractor's risk.

Abbreviations of the titles of official bodies which issue standards or specifications whenever referred to in these specifications are as follows:

ASTM	-	American Society for Testing Materials
AISC	-	American Institute of Steel Construction
AISI	-	American Iron and Steel Institute
ANSI	-	American National Standards Institute
AISE	-	Association of Iron and Steel Engineers
AWS	-	American Welding Society
JIS	-	Japanese Industrial Standards
SSPC	-	Steel Structures Painting Council
AGMA	-	American Gear Manufacturers Association
SAE	-	Society of Automotive Engineers
ASME	-	American Society of Mechanical Engineers

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Steel sheet piles shall conform to the requirements of ASTM Designation A 328. The minimum section modulus, weight, shape, and size of piles shall be as specified as shown on the drawings.

A. Tests of Materials

i. All materials, supplies, parts, assemblies used for the work to be done under these Specifications shall be tested according to modern approved methods for the particular type and class of work. Certified copies in triplicate of the tests made and results thereof shall be made available to NIA as soon as possible. The data shall be in such a form as to provide means of assessing compliance with the applicable relevant specifications for the material tested. The

Contractor shall state in his tender the place of manufacture, testing, inspection of the various components of the work included in the contract.

ii. Wherever required, at their discretion, NIA may nominate an Inspector to inspect the tests or trials on their behalf. Sufficient notice must be given by the Contractor to the Inspector to enable him to reach the site of tests/trials except the pay and expenses of the Inspector shall be included in the quoted price. All authorized representatives of NIA shall have free access to the work premises of the contract at all reasonable times and shall be provided by the Contractor full facilities and safety to inspect the process of manufacture and the materials used. NIA will reject any material/work that in their opinion does not conform to the specifications and will order the same to be removed and replaced or altered at the expense of the Contractor to conform to the specifications.

iii. If materials are not referred to in the applicable Standard Specifications but are required to have certain physical and /or chemical properties, such properties shall be checked by two chemical samples for each 5 tons of materials and fractions thereof in each lot. For lots less than 250 kilograms, Contractor's warrants will be acceptable in lieu of actual tests provided heat treatment of the fabricated parts using such materials is not required. A lots shall consist of all materials of the same physical size and conditions submitted at one time in which the material is from the same melt or heat and on which any subsequent heat treatment has been performed at the same conditions. Not more than two heat treatment to attain the desired physical properties shall be permitted.

iv. Notwithstanding the above tests, examination and inspection, the Contractor shall be responsible for the acceptability of the finished work.

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C. Manufacturing/Fabrication Program

i. The fabricator/manufacturer shall prepare a manufacturing/fabrication program in Bar Graph Form showing the activities and its sequencing in sufficient details such that the contract works can be properly monitored from commencement to completion.
ii. The fabricator/manufacturer shall submit said program within thirty (30) calendar days after the date of receipt of Notice of Award.
iii. The fabricator/manufacturer shall show the target dates for commencing and completing the principal activities as required for in the contract works including but not limited to the following:

   a. procurement of materials and the like
   b. fabrication and manufacture
   c. painting
   d. delivery dates

D. Pre-fabrication Inspection Works

i. The fabricator/manufacturer shall be required to submit mill and/or manufacturer's certificate for the steel materials, welding electrode, paints, etc. intended for use in the works.

ii. Materials to be used in the fabrication shall be adequately sampled and tested to check its compliance with the specification/standard requirements.

iii. No fabrication work and/or use of materials in such works shall commence unless materials for said works are duly inspected, tested, and certified by NIA or his authorized representatives as to conformity with the specification/ standard requirements.

iv. NIA technical inspector shall prepare and submit inspection and acceptance report on materials for use in the fabrication works.

E. Inspection Works During Actual Fabrication

1. The NIA should assign a knowledgeable and experienced technical inspector, to conduct inspection.
2. The NIA's authorized technical inspector shall be entitled at all reasonable time free access to the manufacturer's/fabricator's plant to conduct inspection during fabrication, to ascertain that all the works shall comply in all aspect with the standards and requirements set forth in the contract documents.
3. The NIA technical inspectors shall monitor progress and conduct of the fabrication works and prepare and submit progress report on said works at regular intervals.

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F. Final Inspection Works

1. Intake Gates, Main Canal Gates, Lateral and Turnout Gates

i. The NIA technical inspector shall conduct final inspection based on the approved fabrication drawings and specifications.

i.i. The NIA technical inspector should see to it that all component parts should be properly pre-assembled at the fabricator's/manufacturer's shop to ascertain the proper fitness of all adjoining parts and should be properly punch mark before disassembling for guidance and reference during field installation.

iii. T h e NIA shall issue certificate of pre-delivery inspection and acceptance of completed fabrication works as a basis for the final inspection and ac-acceptance by the field office of deliveries made at the site.

ANTI-CORROSION MEASURES AND PAINTING

a. General

i. The steel gate shall be designed to minimize as much as possible the effects of localized corrosion. Drain holes shall be provided in all locations where the entrapment of water can occur.

ii. All steel surfaces except stainless steel surfaces shall be coated and/or painted with a protective film specified under Section C below.

iii. Crevices over which the protective film can bridge shall be retouched or repaired prior to coating.

iv. Boxed in members shall be provided with access holes or shall be treated internally with an effective coating material.

v. All coating or paint materials to be used shall be original sealed container bearing the manufacturer's label revealing complete identification of content and shall be subject to inspection by NIA prior to coating and/or painting. The NIA shall have the right to reject any paint material supplied under these specifications which is found to be defective.

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b. Surface Preparation and Shop Painting

Upon completion of fabrication and machining works but prior to application of coating materials, the Contractor shall notify NIA in writing that the surface preparation for painting is in progress. Coating application shall commence only after the NIA or their duly authorized representatives have inspected and subsequently approved the surface preparation in accordance with these specifications.

NIA or their designated inspectors shall undertake from time to time, inspection of the painting works while it is in progress. NIA shall be at liberty to reject outright any deviation to material specifications and procedure noted during inspection.

Notwithstanding such inspection, the Contractor shall be held responsible for the acceptability of the finished work.

All oil, grease, soil and other contaminants shall be removed from steel and cast iron surfaces by the use of clean solvent, emulsion, cleaning compound or other methods which involve cleaning action.

Following the solvent, the surfaces shall be cleaned of all defective or damage areas of existing paint, and of all loose rust, loose mill scale and other foreign substance in accordance with the requirements for surface preparation as specified hereunder.

i. Immersed Steel

Except where otherwise specified, all steel surfaces and all parts of structures that have surfaces which are exposed and/or permanently immersed in water, shall be blast cleaned by commercial blast cleaning (SSPC-SP6) then painted with 2 coats of coal tar epoxy paint conforming to U.S. Military Specifications MIL-P23236 (Ships) Type I, Class 2 to produce a total dry film thickness of 400 microns (16 mils.),

ii. Steel Exposed to Atmosphere (Lifting Mechanism and Accessories including Enclosures)

Except where otherwise specified all steel and cast iron surfaces of lifting mechanism and accessories including its enclosure which are exposed to atmosphere shall be blast cleaned by commercial blast cleaning (SSPC-SP6) then applied with 1 coat of Alkyd Red Lead Primer. After proper drying time is attained apply 2 coats of Alkyd Enamel finish to attain a total dry film thickness of 175 microns (7 mils.).

iii. Embedded Steel Work

Where not otherwise specified, all steel surfaces which will be

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embedded or against which concrete will be placed shall be cleaned by power tool cleaning (SSPC-SP3) then painted with 1 coat of cement latex milk consisting of 10 parts of Portland Cement (by weight), 5 parts of water and 1 part modified latex emulsion.

iv. Repair of Paint Film

The Contractor shall retouch or repair areas of steel gates which maybe damaged during transit from shop to the site of delivery.

All paints shall be applied in conformity with SSPC-PAI Shop, Field and Maintenance Painting, by skilled personnel fully experienced in this type of work.

C. Machine Surfaces

All finished surfaces of ferrous metals that will be exposed during shipment or while awaiting installation shall be cleaned in accordance with a coating of heavy, gasoline rust preventive compound.

D. Stainless Steel Surfaces

No painting is required for finished or unfinished stainless-steel parts.

SITE PREPARATION

All site preparation as may be required or as shown on the drawings and any excavation within the area to be occupied by piles shall be completed before the piles are driven.

PROTECTION OF PILE HEADS

The heads of all piles shall be protected during driving by suitable caps, rings, heads, blocks, mandrels, and other devices.

The heads of steel piles shall be cut square and fitted with a steel-driving cap.

Driving heads, mandrels, and other devices shall be provided by the Contractor as needed for special types of piles and shall conform to the recommendations of the pile manufacturer.

DRIVING SHEET PILING

The piling shall be driven in such a manner as to insure perfect interlocking throughout the entire length of each pile to the depth specified. The piles shall be held in proper alignment during driving by means of assembling frames or other

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suitable temporary guide structures. Temporary guide structures shall be removed when they have served their purpose.

At any time that the forward edge of the sheet pile wall is found to be out of correct alignment: (a) the piling already assembled and partly driven shall be driven to the required depth, and (b) taper piles shall then be driven to bring the forward edge into correct alignment before additional regular piling is assembled and driven. The maximum permissible taper in a single pile shall be one-fourth inch per foot of length.

CUTTING OFF PILES

The Contractor shall cut the piles off at the specified elevations. The length of pile cut off shall be sufficient to permit the removal of all damage material.

Steel sheet piles shall be cut off in clean, straight lines as shown on the drawings. Any irregularities shall be leveled off with deposits of weld metal or by grinding before placement of bearing caps.

DEFECTIVE PILES

Any pile damaged in driving, driven out of its proper location, driven below the specified cut off elevation, or inaccurately cut off shall be corrected by one of the following methods, whichever is approved by the Engineer:

a. The defective pile shall be pulled and replaced or re-driven;

b. A new pile shall be driven adjacent to the defective pile; or

c. The defective pile shall be spliced or built up or a sufficient portion of the footing shall be extended to properly embed the pile.

All piles pushed up or dislocated by the driving of adjacent piles or by any other cause shall be re-driven to the proper position.

Any sheet pile ruptured in the interlock or otherwise damaged during driving shall be pulled and replaced.

SOIL ANCHORS

When soil anchors are specified, the depth and spacings will be as shown on the drawings, and as further specified in Section 10.

Tieback holes to be drilled to depths indicated on the drawings at an angle of 10 degrees to the horizontal. Auger must be positioned such that a projection of the hole centerline coincides with the tieback. Angle of tieback can be increased or

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decreased by approximately 5 degrees as necessary due to field conditions encountered after obtaining prior approval from the Engineer.

High strength rods shall be installed in the holes using spiders to center the rod in the hole. Rod is to project from hole so a coupler can be readily fitted. High strength grout is to be immediately injected into the primary penetration area. The high strength grout shall have a minimum compressive strength of 3000 psi. at 28 days. The slump at time of placement shall be more than 1 inch and less than 3 inches.

Contractor will be responsible for re-drills or tieback replacement for those, which fail to meet test loads.

The tieback rods shall extend through holes cut in the sheeting. The installation of the stiffeners, and anchor plate with grout when specified, shall follow with tightening the anchor nuts.

When grout has attained the minimum strength specified, stress shall be applied to the rod to 200 percent of the design load for 10 minutes. After the test has been performed, the stress and certified by a testing the laboratory.

The Contractor shall install wedge washers as required to correct any misalignment of anchor rod with wale seat. Anchors shall be stressed straight and true. Kinking or sharp curvature in anchors under tension shall be cause for rejection. Rod shall show no excessive movement at the test load during testing time and the testing jack shall be capable of holding test load for 10 minutes without bleeding off of pressure.

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BASIS OF PAYMENT

The cost for the supply and delivery of various steel gates will be paid at the contract unit price per assembly or the lump sum price whichever is stated in the Bill of Quantities, which shall include all equipment and materials prescribed in this section and directed by the Engineer.

The cost for the installation provided under this item will be paid at the contract unit price which shall constitute full compensation for furnishing all labor, materials, tools, equipment, supplies and all incidentals and subsidiary work necessary for the successful completion of the works.

Payment for the work provided under this item will be made separately for the supply and delivery, and installation of various gates and lifting mechanism as follows:

a) Supply and delivery

For the supply and delivery of various gates and lifting mechanisms, eighty percent (80%) of the respective unit price in the Bill of Quantities shall be paid upon delivery to the project site in accordance with this technical specification acceptable to NIA.

All equipment/materials delivered at the site, shall be kept by the Contractor and will be responsible for any loss or damage of the equipment/materials until they are installed. Any loss or damage to the equipment/materials shall be replaced by the Contractor at his own expense.

Twenty percent (20%) shall be paid upon installation of the equipment and materials, and ready for operation as certified by the Engineer.

b) Installation

One hundred percent (100%) of the respective unit price of each installation works which shall include labor, consumable materials, subsidiary works other incidentals required for the successful completion of the works shall be paid upon complete installation of the respective equipment/ materials all in accordance with the drawings and accepted by the Engineer.

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SECTION X

FILTER DRAIN

901 SCOPE

The work under this Section shall include furnishing, placing on approved subgrade and compacting graded sand and gravel in layers and to the thickness and dimensions indicated on the Drawings, including furnishing and construction of 50mm dia. PVC pipe weepholes with filter cloth tied at the inner end of weepholes to provide outlet for filter, if any, all in accordance with these Specifications or as directed by the Department Manager A or his authorized representatives.

902 MATERIALS

Filter materials shall consist of unweathered sand and gravel obtained from river bed deposits or from designated quarries. To meet the gradation requirements, crushing, screening and washing may be required. The materials shall be composed of tough, durable particles, reasonably free from thin, flat and elongated pieces and shall be well graded between the following limits:

U. S. Standard Seive Size	Percent Passing by Weight			
	1st Stage	2nd Stage	3rd Stage	Bedding
2 inches			100	100
1 inch		100	5-35	70-90
1/2 inch	100	90-100	0-5	45-75
No. 4	85-100	70-90		25-60
No. 8	70-95	40-75		15-45
No. 16	50-85	10-40		0-20
No. 30	25-70	0-20		
No. 50	5-50			
No. 100	0-30			
No. 200	0-10			

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903 METHOD OF CONSTRUCTION

The bed for the filter drain shall be excavated to the required elevation and dimension shown on the Drawings and then properly compacted as directed by the Department Manager A or his authorized representatives. The materials shall be damped and spread on the prepared bed and each layer shall be compacted by a suitable compactor to a degree approved by the Department Manager A or his authorized representatives. Placement of succeeding layers will be allowed only after the Department Manager A or his authorized representatives has approved the placement and compaction of the preceding layer. When concrete is to be placed directly on the filter, the entire surface upon which concrete is to be placed shall be covered with a layer of reinforced building paper before concrete is placed.

904 METHOD OF MEASUREMENT

Filter drain will be measured by the number of cubic meter of materials acceptably laid, compacted and provided with weepholes for outlets, if any.

905 BASIS OF PAYMENT

The volume measured as provided above shall be paid at the contract unit price, which price and payment shall constitute full compensation for furnishing all materials, supplies, labor, equipment, tools and all incidentals or subsidiary works necessary for the successful completion of the work described under this Section. Reinforced building paper required to cover the filter shall be included in the unit bid price for applicable concreting work

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"ANNEX A" BILL OF QUANTITIES AND BID PRICES

Contract No.EPA-2026-MARIIS-DIV-RNIS-03

Rehabilitation and protection works of scoured embankment along Macañao Checkgate sta. 0+310 - 0+608 (One Side Only) (Total Length = 298.00 m)

Item No.	Description of Works	Qty	Unit	Unit Price	AMOUNT
	Lot 1 - Rehabilitation and protection works of scoured embankment along Macañao Checkgate sta. 0+310 - 0+608 (One Side Only)(Total Length = 297.50 m)				
1	**Temp. Works, Mobilization And Demobilization of Construction Equipment**	1.00	LS		
				in words:	in words:
				in words:	
2	**Common Excavation**	297.50	kg		
				in words:	in words:
				in words:	
3	**Furnish and Installation of Hot Rolled Type II U-Shape Sheet Pile (w=400mm,H=100mm, T=10.5mm) -48kg/m (SY-295)**				
	a.Furnishing	428,544.00	kg		
				in words:	in words:
				in words:	
	b. Installation Works	428,544.00	kg		
				in words:	in words:
				in words:	

Item No.	Description of Works	Qty	Unit	Unit Price	AMOUNT
4	**Structure Backfill**	267.75	cu.m		
				in words:	in words:
				in words:	
5	**Gravel Blanket**	29.75	cu.m		
				in words:	in words:
				in words:	
6	**Furnish of Reinforcing Steel Bar**	2,602.34	kg		
				in words:	in words:
				in words:	
7	**Installation of Reinforcing Steel Bar**	2,602.34	kg		
				in words:	in words:
				in words:	
8	**Class "A" Concrete**	65.45	cu.m		
				in words:	in words:
				in words:	
9	**CSHP (Costruction Occupational Safety and Health) Program and Project Billboards/Signages**	1.00	LS		
				in words:	in words:
				in words:	
	TOTAL BIDDED AMOUNT				
				in words:	

The undersigned bidder hereby Certify that he/she has fully informed him/herself of all conditions. Local and otherwwise affecting the carrying out of the Contract Works and that his/her bid has been in strict accordance with terms and conditions of the Bid Documents.

Name in Print and Signature of Bidder/Date