

**PHILIPPINE
PORTS
AUTHORITY**



PORT MANAGEMENT OFFICE - MARINDUQUE/QUEZON

PORT OPERATION BUILDING, BRGY. TALAO-TALAO, PORT AREA, LUCENA CITY, PHILIPPINES

IMPROVEMENT OF QUEZON PORT PROJECT

PORT OF QUEZON, QUEZON PROVINCE

BID DOCUMENTS

(MRQ-C2020-01)

BIDDING DOCUMENTS

for

IMPROVEMENT OF QUEZON PORT PROJECT PORT OF QUEZON, QUEZON PROVINCE

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Instruction for Submission of Bids

Philippine Ports Authority
Port Management Office of Marinduque/Quezon
(PMO-Marquez)

BIDS AND AWARDS COMMITTEE FOR ENGINEERING PROJECTS

INSTRUCTIONS FOR SUBMISSION OF BIDS

Name of Project: **Improvement of Quezon Port Project**
Port of Quezon, Quezon Province

- I. Bidders shall submit to the Bids and Awards Committee, through the Secretariat, their Bids on or before the published deadline. Bids submitted/received after the published deadline shall be marked "LATE" and shall not be accepted.
- II. Bidders shall submit their bids using the forms specified in the Bidding Documents in **two (2) sealed envelopes**, and which shall be submitted simultaneously. (Section 25 of the 2016 revised IRR of RA 9184)
- III. The **First Envelope** shall contain the technical component of the bid including the eligibility requirements, or **Technical Bid** for short. The **Technical Bid** shall therefore be composed of two parts, as follows:
 - A) **Part A - Eligibility requirements.** Please refer to the Eligibility Statement Form for the eligibility requirements and instructions.
 - B) **Part B - Project requirements.** This shall contain the following documents:
 1. Bid Security
 2. Organizational chart for the contract to be bid
 3. List of contractor's key personnel with their complete qualification and experience data
 4. List of contractor's equipment units supported by certification of availability of equipment
 5. Omnibus Sworn Statement.
 6. Certificate of Site Inspection
 - The site inspection must be conducted by the Bidder's President/General Manager/Authorized Managing Officer or by the Project Manager or Project Engineer pledged/committed by the Bidder to the project to be bid.
 - For this project, the Certificate of Site Inspection shall be issued by **Brgy. Chairman or Municipal Mayor**, Where the project is located.
- IV. The **Second Envelope** shall contain the financial component of the bid, or **Financial Bid** for short, and shall have the following documents:
 1. Bid proposal in the prescribed form
 2. Bid prices in the Bill of Quantities in the prescribed form
 3. Detailed estimates
 4. Summary sheet indicating the unit prices of construction materials, labor rates and equipment rental rates used in coming up with the bid.
 5. Cash flow by quarter and payment schedule
- V. Bidders shall submit their Bids using the Forms supplied in the Bidding Documents. Bidders must use and properly accomplished all supplied forms without alterations to their format. Substitute forms shall not be accepted. Bidders shall fill out all the supplied forms very legibly and shall likewise attach clear and legible copies of supporting documents. Any interlineations, erasures or overwriting to the entries on the forms shall be valid only if signed or initialed by the authorized signatory.

- VI. Pages in the Technical Bid shall be paged as follows:
1. Part A - Eligibility requirements. The paging on the eligibility statements including attached documents thereto shall be A1, A2, A3 and so on.
 2. Part B - Project requirements. The paging on the project requirements including attached documents thereto shall be B1, B2, B3 and so on.
- VII. All pages of the Financial Bid including attached documents thereto shall be chronologically paged (1, 2, 3, and so on) and initialed/signed by the authorized signatory at the right bottom corner of each and every page.
- By affixing the initial/signature at the right bottom corner of each and every page of the Technical Bid and Financial Bid, the authorized signatory acknowledges that he/she prepared the requirements/bid himself/herself or the same were prepared under his/her direct supervision.
- VIII. Bidders shall use legal size bond paper in their Technical and Financial Bids, except original copies of documents from other agencies/entities that must be attached to the Technical and Financial Bids.
- IX. The Technical and Financial Bids shall be provided with "cover" and "table of contents", samples of which are attached in Section VIII (Bidding Forms) of this Bidding Documents.
- X. Bidders shall submit eight (8) sets (one original and 7 clear copies) each of the Technical Bid and Financial Bid. All sets/copies shall be properly book bound with hard cover. Screw-bound, ring-bound, combo-bound, fastener-bound or stapler-bound are not acceptable. Failure to comply with these requirements shall be ground for disqualification/failure of Bid.
1. The Technical Bid – The eligibility requirements (Part A) and the technical/project requirements (Part B) shall be consolidated into one properly bound book which shall be denominated as the "Technical Bid".

The original and seven (7) copies of the Technical Bid shall be placed in one (1) envelope (or properly wrapped together), duly sealed and marked as "Envelope No. 1 - Technical Bid".
 2. The original and seven (7) copies of the Financial Bid shall be placed in another envelope (or properly wrapped together), duly sealed and marked as "Envelope No. 2 - Financial Bid".
 3. The envelopes containing the Technical and Financial Bid shall then be placed in a single envelope (or properly wrapped together), duly sealed and with the following markings:
 - a) Name of the Contract to be Bid
 - b) Name and address of Bidder
 - c) Name and address of Procuring Entity
 - d) Shall bear the warning "DO NOT OPEN BEFORE (the scheduled time and date of the opening of bids) ".
- XI. Bidders or their duly authorized representatives are enjoined to attend the opening of the Bids, the date and time of which are indicated in the Invitation to Bid. Bidders' authorized representatives should present a written authority (from the concerned Bidder-Firm) to be allowed to attend the meetings/proceedings. Failure to present the written authority shall result to non-recognition of the bidders' representatives during BAC meetings/proceedings.
- XII. For samples of the Bidding Documents, visit the GPPB website at www.gppb.gov.ph.
- XIII. For further clarification regarding the above instructions, please visit or call the Contact Person/s indicated in the Invitation to Bid.

Section I. Invitation to Bid



INVITATION TO BID

The Philippine Ports Authority – Port Management Office of Marinduque/Quezon (PMO MarQuez), through its Bids and Awards Committee for Engineering Projects, invites contractors registered with and classified by the Philippine Contractors Accreditation Board (PCAB) for the re-bidding of the hereunder contract:

- A. Name of Contract : Improvement of Quezon Port Project
- B. Location : Port of Quezon, Quezon Province
- C. Contract Identification/
Reference Number : MRQ-C2020-01
- D. Brief Description : The project involves the construction of back-up area (30m x 12m) with concrete stairlanding (20 ln.m.)
- E. Required Equipment (Owned/Leased):
- | | |
|---------------------------------------|-----------------------------------|
| 1 unit - clamshell | 1 unit - plate compactor, 5hp |
| 1 unit - crawler crane, 30T | 2 units - jackhammer |
| 2 units - concrete mixer, 1-bagger | 1 unit - air-compressor, 250cfm |
| 2 units - concrete vibrator, 3.5hp | 1 unit - concrete cutter |
| 2 units - bar cutter (25mm dia min.) | 1 unit - road grader, 125hp |
| 2 units - bar bender (25mm dia min.) | 1 unit - payloader, 80hp |
| 1 unit - dump truck, 8cu.m./275hp | 1 unit - concrete screeder |
| 1 unit - water truck/wagon, 1000gal | 1 unit - backhoe, 0.4cu.m./94.3hp |
| 1 unit - oxy acetylene cutting outfit | 1 unit - cargo truck, 5T |
| 2 units - chipping hammer | |
- F. Approved Budget for the Contract (ABC): PHP 13,883,790.69
- G. Source of Fund: PPA Corporate Fund, CY 2020 PPA Budget
- H. Contract Duration: 180 calendar days
- I. Required PCAB Registration Particulars: At least “Small B” for Port, Harbor and Offshore Engineering

Only those contractors with PCAB Registration of at least “Small ‘B’ Port, Harbor and Offshore Engineering” will be issued Bidding Documents, and upon payment of non-refundable cost of the documents in the amount of P25,000.00. Interested contractors are required to present a certified copy of their PCAB license and registration when purchasing the Bidding Documents.

Prospective bidders should possess a valid PCAB license and registration particulars applicable to the type and cost of the contract to be bid, have key personnel and equipment available for the prosecution of the contract as listed in Item E above, and must have completed at least one (1) contract that is similar to the contract to be bid, and with the same major categories of work as the contract to be bid, and whose value is at least 50% of the approved budget for the contract to be bid, updated to current prices using the PSA consumer price indices. Prospective bidders must likewise meet the other eligibility, technical/project and financial requirements and other requirements stated in the Eligibility Statement Forms and the Bidding Documents.

Port Management Office of Marinduque/Quezon

Port Operations Building
Brgy. Talao-talao, Port Area, Lucena City 4301 Philippines
Tel. No.: (042) 785 - 1250
pmomarquez@ppa.com.ph

Bidding will be conducted through open competitive bidding procedures using non-discretionary “pass/fail” criteria as specified in the 2016 Revised IRR of RA 9184, otherwise known as the “Government Procurement Reform Act.”

Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least 75% interest or outstanding capital stock belonging to citizens of the Philippines.

The schedule of procurement activities is as follows:

Procurement Activities	Schedule		
	Time	Date	Venue
1. Period of availability/issuance of Bidding Documents		January 15 to February 10, 2021	PMO MarQuez Conference Room, Port Operations Building, Brgy. Talao-Talao, Port Area., Lucena City
2. Pre-Bid Conference	9:00 AM	January 28, 2021	-do-
3. Deadline of submission and receipt of Bids	9:00 AM	February 10, 2021	-do-
4. Opening and Examination of Bids	9:30 AM	February 10, 2021	-do-

Bidders must submit their bids on the date, time and place specified in the above schedule. Late bids will not be accepted. All bids must be accompanied by a bid security in any of the forms and corresponding amount stated in the Bidding Documents. Bids received in excess of the ABC shall be automatically rejected at bid opening.

The Philippine Ports Authority – PMO MarQuez 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 41 of RA 9184 and its revised IRR, without thereby incurring any liability to the affected bidder or bidders. The Philippine Ports Authority- PMO MarQuez assumes no responsibility whatsoever to compensate or indemnify the bidders of any expenses incurred in the preparation of their bids.

For further information, please call or contact Mr. Israel R. Cambi, Secretariat Head, at telephone no. (042) 785-1250 or visit the Philippine Ports Authority – PMO MarQuez at Port Operations Building, Brgy. Talao-Talao, Port Area, Lucena City.

SHERWIN LEMUEL A. CHAVEZ
BAC Chairperson

Period of Posting in the PhilGEPS & PPA websites and PMO MarQuez bulletin board: January 15 – 21, 2021

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Section II. Instruction to Bidders

A. General

1. Scope of Bid

- 1.1. The Procuring Entity as defined in the **BDS**, invites bids for the construction of Works, as described in VI. Specifications. The name and identification number of the Contract is provided in the **BDS**.
- 1.2. The successful bidder will be expected to complete the Works by the intended completion date specified in SCC Clause 1.16.

2. Source of Funds

The Procuring Entity has a budget or has applied for 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 the Project, as defined in the **BDS**, to cover eligible payments under the Contract for the Works.

3. Corrupt, Fraudulent, Collusive, and Coercive Practices

- 3.1. 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 Funding Source:
 - (a) defines, for purposes of this provision, the terms set forth below as follows:
 - (i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they 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 Procuring Entity, 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 Republic Act 3019;
 - (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Procuring Entity, and 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; and
 - (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;
 - (b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract; and

- (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded Contract funded by the Funding Source if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing or, or in executing, a Contract funded by the Funding Source.
- 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 3.1(a).
- 3.3. Furthermore, the Funding Source and the Procuring Entity reserve the right to inspect and audit records and accounts of a contractor in the bidding for and performance of a contract themselves or through independent auditors as reflected in the **GCC** Clause 34.

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 (g) below:
- (a) A Bidder has controlling shareholders 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 legal 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 will include a firm or an organization 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;
 - (e) A Bidder submits more than one bid in this bidding process. However, this does not limit the participation of subcontractors in more than one bid;
 - (f) 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
 - (g) A Bidder who lends, or temporary 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. In accordance with Section 47 of the *IRR* of RA 9184, all Bidding Documents shall be accompanied by a sworn affidavit of the Bidder that it is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), members of the Technical Working Group (TWG), members of the BAC Secretariat, the head of the Project Management Office (PMO) or the end-user

unit, and the project consultants, by consanguinity or affinity up to the third civil degree. On the part of the bidder, this Clause shall apply to the following persons:

- (a) If the Bidder is an individual or a sole proprietorship, to the Bidder himself;
- (b) If the Bidder is a partnership, to all its officers and members;
- (c) If the Bidder is a corporation, to all its officers, directors, and controlling stockholders; and
- (d) If the Bidder is a joint venture (JV), the provisions of items (a), (b), or (c) of this Clause shall correspondingly apply to each of the members of the said JV, as may be appropriate.

Relationship of the nature described above or failure to comply with this Clause will result in the automatic disqualification of a Bidder.

5. Eligible Bidders

5.1. Unless otherwise indicated in the **BDS**, the following persons shall be eligible to participate in this Bidding:

- (a) Duly licensed Filipino citizens/sole proprietorships;
- (b) Partnerships duly organized under the laws of the Philippines and of which at least seventy five percent (75%) of the interest belongs to citizens of the Philippines;
- (c) Corporations duly organized under the laws of the Philippines, and of which at least seventy five percent (75%) of the outstanding capital stock belongs to citizens of the Philippines;
- (d) Cooperatives duly organized under the laws of the Philippines, and of which at least seventy five percent (75%) of the interest belongs to citizens of the Philippines; and
- (e) Persons/entities forming themselves into a JV, i.e., a group of two (2) or more persons/entities that intend to be jointly and severally responsible or liable for a particular contract: Provided, however, that, in accordance with Letter of Instructions No. 630, Filipino ownership or interest of the joint venture concerned shall be at least seventy five percent (75%): Provided, further, that joint ventures in which Filipino ownership or interest is less than seventy five percent (75%) may be eligible where the structures to be built require the application of techniques and/or technologies which are not adequately possessed by a person/entity meeting the seventy five percent (75%) Filipino ownership requirement: Provided, finally, 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 members of the joint venture as specified in their JVA.

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. Government Corporate Entities may be eligible to participate only if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not dependent agencies of the GOP or the Procuring Entity.

- 5.4. Unless otherwise provided in the **BDS**, the Bidder must have completed at least one contract similar to the Project the value of which, adjusted to current prices using the National Statistics Office consumer price index, must be at least equivalent to a percentage of the ABC stated in the **BDS**.

For this purpose, contracts similar to the Project shall be those described in the **BDS**, and completed within the period stated in the Invitation to Bid and **ITB** Clause 12.1(a)(iii).

- 5.5. Unless otherwise provided in the **BDS**, the Bidder must submit a computation of its Net Financial Contracting Capacity (NFCC) or a Commitment from a Universal or Commercial bank to extend a credit line in its favor if awarded the contract for this project (CLC).

The NFCC, computed using the following formula, must be at least equal to the ABC to be bid:

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 contract for this Project.

The value of the Bidder's current asset and current liabilities shall be based on the data submitted to the BIR through its Electronic Filing and Payment System (EFRPS). [GPPB Resolution No. 20-2013 and GPPB Circular 02-2014].

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. Bidding Forms as required in **ITB** Clause 12.1(b)(iii).
- 6.2. The Bidder is responsible for the following:
- (a) Having taken steps to carefully examine all of the Bidding Documents;
 - (b) Having acknowledged all conditions, local or otherwise, affecting the implementation of the contract;
 - (c) Having made an estimate of the facilities available and needed for the contract to be bid, if any; and
 - (d) Having complied with its responsibility to inquire or secure Supplemental/Bid Bulletin/s as provided under **ITB** Clause 10.3.
 - (e) Ensuring that it is not "blacklisted" or barred from bidding by the GOP or any of its agencies, offices, corporations, or LGUs, including foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the GPPB;
 - (f) Ensuring that 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;
 - (g) Authorizing the Head of the Procuring Entity or its duly authorized representative/s to verify all the documents submitted;
 - (h) Ensuring 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 and/or to represent the Bidder in the bidding,

with the duly notarized Secretary's Certificate attesting to such fact, if the Bidder is a corporation, partnership, cooperative, or joint venture;

- (i) Complying with the disclosure provision under Section 47 of the Act in relation to other provisions of Republic Act 3019; and
- (j) Complying with existing labor laws and standards, if applicable.

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

- 6.3. The Bidder, by the act of submitting its bid, shall be deemed to have inspected the site and determined the general characteristics of the contract works and the conditions for this Project. Unless otherwise indicated in the **BDS**, failure to furnish all information or documentation required in this Bidding Documents shall result in the rejection of the bid and the disqualification of the Bidder.
- 6.4. It shall be the sole responsibility of the prospective bidder to determine and to satisfy itself by such means as it considers necessary or desirable as to all matters pertaining to this Project, including: (a) the location and the nature of the contract, project, or work; (b) climatic conditions; (c) transportation facilities; (d) 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 (e) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work.
- 6.5. 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.
- 6.6. Before submitting their bids, the Bidders are deemed to have become familiar with all existing laws, decrees, ordinances, acts and regulations of the Philippines which may affect the contract in any way.
- 6.7. The Bidder shall bear all costs associated with the preparation and submission of his bid, and the Procuring Entity will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- 6.8. Bidders should note that the Procuring Entity will only accept bids only from those that have paid the nonrefundable 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 Procuring Entity and stated in the **BDS**. However, subcontracting of any portion shall not relieve the Bidder from any liability or obligation that may arise from the contract for this Project.
- 8.2. Subcontractors must submit the documentary requirements under **ITB** Clause 12 and comply with the eligibility criteria specified in the **BDS**. In the event that any subcontractor is found by the Procuring Entity to be ineligible, the subcontracting of such portion of the Works shall be disallowed.

- 8.3. The Bidder may identify the subcontractor to whom a portion of the Works will be subcontracted at any stage of the bidding process or during contract implementation. If the Bidder opts to disclose the name of the subcontractor during bid submission, the Bidder shall include the required documents as part of the technical component of its id.

B. Contents of Bidding Documents

9. Pre-Bid Conference

- 9.1. If so specified in the **BDS**, a pre-bid conference shall be held at the venue and on the date indicated therein, to clarify and address the Bidders' questions on the technical and financial components of this Project.
- 9.2. Bidders are encouraged to attend the pre-bid conference to ensure that they fully understand the Procuring Entity's requirements. Non-attendance of the Bidder will in no way prejudice its bid; however, the Bidder is expected to know the changes and/or amendments to the Bidding Documents discussed during the pre-bid conference.
- 9.3. Any statement made at the pre-bid conference shall not modify the terms of the bidding documents unless such statement is specifically identified in writing as an amendment thereto and issued as a Supplemental/Bid Bulletin.

10. Clarification and Amendment of Bidding Documents

- 10.1. Bidders who have purchased the Bidding Documents may request for clarification(s) on any part of the Bidding Documents or for an interpretation. Such a request must be in writing and submitted to the Procuring Entity at the address indicated in the **BDS** at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.
- 10.2. Supplemental/Bid Bulletins may 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.
- 10.3. Any Supplemental/Bid Bulletin issued by the BAC shall also be posted on the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the Procuring Entity concerned, if available. It shall be the responsibility of all Bidders who secure 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 informed and allowed to modify or withdraw their bids in accordance with **ITB** Clause 23.

C. Preparation of Bids

11. Language of Bids

The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Procuring Entity, shall be written in English. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation in English certified by the appropriate embassy or consulate in the Philippines, in which case the English translation shall govern, for purposes of interpretation of the Bid.

12. Documents Comprising the Bid: Eligibility and Technical Components

12.1. Unless otherwise indicated in the **BDS**, the first envelope shall contain the following eligibility and technical documents:

(a) Eligibility Documents –

Class "A" Documents:

- (i) Registration certificate from the Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives, or any proof of such registration as stated in the **BDS**;
- (ii) Mayor's permit issued by the city or municipality where the principal place of business of the prospective bidder is located;
- (iii) Statement of all its ongoing and completed government and private contracts within ten (10) years from the submission of bids, unless otherwise stated in the **BDS**, including contracts awarded but not yet started, if any. The statement shall include, for each contract, the following:
 - (iii.1) name of the contract;
 - (iii.2) date of the contract;
 - (iii.3) contract duration;
 - (iii.4) owner's name and address;
 - (iii.5) nature of work;
 - (iii.6) contractor's role (whether sole contractor, subcontractor, or partner in a JV) and percentage of participation;
 - (iii.7) total contract value at award;
 - (iii.8) date of completion or estimated completion time;
 - (iii.9) total contract value at completion, if applicable;
 - (iii.10) percentages of planned and actual accomplishments, if applicable;
 - (iii.11) value of outstanding works, if applicable;
 - (iii.12) the statement shall be supported by the notices of award and/or notices to proceed issued by the owners; and
 - (iii.13) the statement shall be supported by the Constructors Performance Evaluation System (CPES) rating sheets, and/or certificates of completion and owner's acceptance, if applicable;
- (iv) Unless otherwise provided in the **BDS**, valid Philippine Contractors Accreditation Board (PCAB) license and registration for the type and cost of the contract for this Project;
- (v) Audited financial statements, showing, among others, the prospective total and current assets and liabilities, stamped

“received” by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission;

- (vi) NFCC computation or CLC in accordance with **ITB** Clause 5.5; and

Class "B" Document:

- (vii) If applicable, valid Joint Venture Agreement (JVA) or, in lieu thereof, duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful shall be included in the bid.

(b) Technical Documents –

- (i) Bid security as prescribed in **ITB** Clause 18. If the Bidder opts to submit the bid security in the form of:

- (i.1) a bank draft/guarantee or an irrevocable letter of credit issued by a foreign bank, it shall be accompanied by a confirmation from a Universal or Commercial Bank; or

- (i.2) a surety bond accompanied by a certification coming from an authorized Insurance Commission that a surety or insurance company is authorized to issue such instrument;

- (ii) Project Requirements, which shall include the following:

- (ii.1) Organizational chart for the contract to be bid;

- (ii.2) List of contractor’s personnel (*viz.*, project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data; and

- (ii.3) List of contractor’s equipment units, which are owned, leased, and/or under purchase agreements, supported by certification of availability of equipment from the equipment lessor/vendor for the duration of the project; and

- (iii) Sworn statement in accordance with Section 25.2(b)(iv) of the IRR of RA 9184 and using the form prescribed in Section IX. Bidding Forms.

13. Documents Comprising the Bid: Financial Component

13.1. Unless otherwise stated in the **BDS**, the financial component of the bid shall contain the following:

- (a) Financial Bid Form in accordance with the form prescribed in Section IX. Bidding Forms; and
- (b) Any other document required in the **BDS**.

13.2. Unless indicated in the **BDS**, all Bids that exceed the ABC shall not be accepted.

14. Alternative Bids

- 14.1. Alternative Bids shall be rejected. For this purpose, alternative bid is 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 therewith for purposes of bidding. A bid with options is 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.
- 14.2. 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.
- 14.3. 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.

15. Bid Prices

- 15.1. The contract shall be for the whole Works, as described in **ITB** Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.
- 15.2. The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Bids not addressing or providing all of the required items in the Bidding Documents including, where applicable, bill of quantities, shall be considered non-responsive and, thus, 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 "0" (zero) for the said item would mean that it is being offered for free to the Government.
- 15.3. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, prior to the deadline for submission of bids, shall be included in the rates, prices, and total bid price submitted by the Bidder.
- 15.4. Unless otherwise provided in the **BDS**, all bid prices for the given scope of work in the contract as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as indicated in the **BDS** and specified in **GCC** Clause 48 and its corresponding **SCC** provision.

16. Bid Currencies

- 16.1. All bid prices shall be quoted in Philippine Pesos 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 prevailing on the day of the Bid opening.
- 16.2. If so allowed in accordance with **ITB** Clause 16.1, the Procuring Entity for purposes of bid evaluation and comparing the bid prices will convert the amounts in various currencies in which the bid price is expressed to Philippine Pesos at the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.
- 16.3. Unless otherwise specified in the **BDS**, payment of the contract price shall be made in Philippine Pesos.

17. Bid Validity

- 17.1. 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.
- 17.2. In exceptional circumstances, prior to the expiration of the bid validity period, the Procuring Entity may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. The bid security described in **ITB** Clause 18 should also be extended corresponding to the extension of the bid validity period at the least. A Bidder may refuse the request without forfeiting its bid security, but his bid shall no longer be considered for further evaluation and award. A Bidder granting the request shall not be required or permitted to modify its bid.

18. Bid Security

- 18.1. The procuring entity shall prescribe in the BDS the acceptable forms of bid security that bidders may opt to use, which shall include the Bid Securing Declaration or any other form, the amount of which shall be equal to a percentage of the ABC in accordance with the following schedule:

Form of Bid Security	Amount of Bid Security (Equal to Percentage of the ABC)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Two percent (2%)
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	Five percent (5%)

For biddings conducted by local government units, the Bidder may also submit bid securities in the form of cashier's/manager's check, bank draft/guarantee, or irrevocable letter of credit from other banks certified by the BSP as authorized to issue such financial statement.

- 18.2. The bid security should be valid for the period specified in the **BDS**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.
- 18.3. No bid securities shall be returned to bidders after the opening of bids and before contract signing, except to those that failed or declared as post-disqualified, upon submission of a written waiver of their right to file a motion for reconsideration and/or protest. Without prejudice on its forfeiture, Bid Securities shall be returned only after the bidder with the Lowest Calculated Responsive Bid has signed the contract and furnished the Performance Security, but in no case later than the expiration of the Bid Security validity period indicated in **ITB** Clause 18.2.

18.4. Upon signing and execution of the contract, pursuant to **ITB** Clause 31, and the posting of the performance security, pursuant to **ITB** Clause 32, the successful Bidder's Bid security will be discharged, but in no case later than the Bid security validity period as indicated in **ITB** Clause 18.2.

18.5. The bid security may be forfeited:

(a) if a Bidder:

(i) withdraws its bid during the period of bid validity specified in **ITB** Clause 17;

(ii) does not accept the correction of errors pursuant to **ITB** Clause 27.3(b);

(iii) fails to submit the requirements within the prescribed period, or a finding against their veracity, as stated in **ITB** Clause 28.2; or

(iv) any other reason stated in the **BDS**.

(b) if the successful Bidder:

(i) fails to sign the contract in accordance with **ITB** Clause 31;

(ii) fails to furnish performance security in accordance with **ITB** Clause 32; or

(iii) any other reason stated in the **BDS**.

19. Format and Signing of Bids

19.1. Bidders shall submit their bids through their duly authorized representative using the appropriate forms provided in Section IX. Bidding Forms on or before the deadline specified in the **ITB** Clause 21 in two (2) separate sealed bid envelopes, and which shall be submitted simultaneously. The first shall contain the technical component of the bid, including the eligibility requirements under **ITB** Clause 12.1, and the second shall contain the financial component of the bid.

19.2. Forms as mentioned in **ITB** Clause 19.1 must be completed without any alterations to their format, and no substitute form shall be accepted. All blank spaces shall be filled in with the information requested.

19.3. The Bidder shall prepare an original of the first and second envelopes as described in **ITB** Clauses 12 and 13. In addition, the Bidder shall submit copies of the first and second envelopes. In the event of any discrepancy between the original and the copies, the original shall prevail.

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

20. Sealing and Marking of Bids

20.1. Unless otherwise indicated in the **BDS**, Bidders shall enclose their original eligibility and technical documents described in **ITB** Clause 12, in one sealed envelope marked "ORIGINAL - TECHNICAL COMPONENT", and the original of their financial component in another sealed envelope marked "ORIGINAL - FINANCIAL COMPONENT", sealing them all in an outer envelope marked "ORIGINAL BID".

20.2. Each copy of the first and second envelopes shall be similarly sealed duly marking the inner envelopes as "COPY NO. ___ - TECHNICAL COMPONENT"

and "COPY NO. ___ – FINANCIAL COMPONENT" and the outer envelope as "COPY NO. ___", respectively. These envelopes containing the original and the copies shall then be enclosed in one single envelope.

- 20.3. The original and the number of copies of the Bid as indicated in the **BDS** shall be typed or written in indelible ink and shall be signed by the bidder or its duly authorized representative/s.
- 20.4. 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 identified in **ITB** Clause 10.1;
 - (d) bear the specific identification of this bidding process indicated in the Invitation to Bid; and
 - (e) bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of bids, in accordance with **ITB** Clause 21.
- 20.5. If bids are not sealed and marked as required, the Procuring Entity will assume no responsibility for the misplacement or premature opening of the bid. Moreover, failure to comply with the required sealing and marking of bids shall be a ground for disqualification.

D. Submission and Opening of Bids

21. Deadline for Submission of Bids

Bids must be received by the Procuring Entity's BAC at the address and on or before the date and time indicated in the **BDS**.

22. Late Bids

Any bid submitted after the deadline for submission and receipt of bids prescribed by the Procuring Entity, pursuant to **ITB** Clause 21, shall be declared "Late" and shall not be accepted by the Procuring Entity.

23. Modification and Withdrawal of Bids

- 23.1. The Bidder may modify its bid after it has been submitted; provided that the modification is received by the Procuring Entity prior to the deadline prescribed for submission and receipt of bids. The Bidder shall not be allowed to retrieve its original bid, but shall be allowed to submit another bid equally sealed, properly identified, linked to its original bid marked as "TECHNICAL MODIFICATION" or "FINANCIAL MODIFICATION" 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.
- 23.2. A Bidder may, through a letter of withdrawal, withdraw its bid after it has been submitted, for valid and justifiable reason; provided that the letter of withdrawal is received by the Procuring Entity prior to the deadline prescribed for submission and receipt of bids.
- 23.3. Bids requested to be withdrawn in accordance with **ITB** Clause 23.1 shall be returned unopened to the Bidders. A Bidder may also express its intention not to participate in the bidding through a letter which should reach and be stamped by the BAC before the deadline for submission and receipt of bids. A Bidder that

withdraws its bid shall not be permitted to submit another bid, directly or indirectly, for the same contract.

- 23.4. No bid may be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Financial Bid Form. Withdrawal of a bid during this interval shall result in the forfeiture of the Bidder's bid security, pursuant to **ITB** Clause 18.5, and the imposition of administrative, civil, and criminal sanctions as prescribed by RA 9184 and its IRR.

24. Opening and Preliminary Examination of Bids

- 24.1. The BAC shall open the first bid envelopes of Bidders in public as specified in the **BDS** to determine each Bidder's compliance with the documents prescribed in **ITB** Clause 12. For this purpose, the BAC shall check the submitted documents of each bidder against a checklist of required documents to ascertain if they are all present, using a non-discretionary "pass/fail" criterion. If a bidder submits the required document, it shall be rated "passed" for that particular requirement. In this regard, bids that fail to include any requirement or are incomplete or patently insufficient shall be considered as "failed". Otherwise, the BAC shall rate the said first bid envelope as "passed".
- 24.2. Immediately after determining compliance with the requirements in the first envelope, the BAC shall forthwith open the second bid envelope of each remaining eligible bidder whose first bid envelope was rated "passed". The second envelope of each complying bidder shall be opened within the same day. In case one or more of the requirements in the second envelope of a particular bid is missing, incomplete or patently insufficient, and/or if the submitted total bid price exceeds the ABC unless otherwise provided in **ITB** Clause 13.2, the BAC shall rate the bid concerned as "failed". Only bids that are determined to contain all the bid requirements for both components shall be rated "passed" and shall immediately be considered for evaluation and comparison.
- 24.3. Letters of withdrawal shall be read out and recorded during bid opening, and the envelope containing the corresponding withdrawn bid shall be returned to the Bidder unopened. If the withdrawing Bidder's representative is in attendance, the original bid and all copies thereof shall be returned to the representative during the bid opening. If the representative is not in attendance, the Bid shall be returned unopened by registered mail. The Bidder may withdraw its bid prior to the deadline for the submission and receipt of bids, provided that the corresponding letter of withdrawal contains a valid authorization requesting for such withdrawal, subject to appropriate administrative sanctions.
- 24.4. If a Bidder has previously secured a certification from the Procuring Entity to the effect that it has previously submitted the above-enumerated Class "A" Documents, the said certification may be submitted in lieu of the requirements enumerated in **ITB** Clause 12.1(a), items (i) to (vi).
- 24.5. In the case of an eligible foreign Bidder as described in **ITB** Clause 5, the Class "A" Documents enumerated in **ITB** Clause 12.1(a) may be substituted with the appropriate equivalent documents, if any, issued by the country of the foreign Bidder concerned.
- 24.6. Each partner of a joint venture agreement shall likewise submit the documents required in **ITB** Clauses 12.1(a)(i) and 12.1(a)(ii). Submission of documents required under **ITB** Clauses 12.1(a)(iii) to 12.1(a)(vi) by any of the joint venture partners constitutes compliance.

- 24.7. A Bidder determined as “failed” has three (3) calendar days upon written notice or, if present at the time of bid opening, upon verbal notification within which to file a request for reconsideration with the BAC: Provided, however, that the request for reconsideration shall not be granted if it is established that the finding of failure is due to the fault of the Bidder concerned: Provided, further, that the BAC shall decide on the request for reconsideration within seven (7) calendar days from receipt thereof. If a failed Bidder signifies his intent to file a request for reconsideration, the BAC shall keep the bid envelopes of the said failed Bidder unopened and/or duly sealed until such time that the request for reconsideration or protest has been resolved.

E. Evaluation and Comparison of Bids

25. Process to be Confidential

- 25.1. Members of the BAC, including its staff and personnel, as well as its Secretariat and TWG, are prohibited from making or accepting any kind of communication with any bidder regarding the evaluation of their bids until the issuance of the Notice of Award, unless otherwise allowed in the **BDS** or in the case of **ITB** Clause 26.
- 25.2. 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 Bidder’s Bid.

26. 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 and that is not in response to a request by the Procuring Entity shall not be considered

27. Detailed Evaluation and Comparison of Bids

- 27.1. The Procuring Entity will undertake the detailed evaluation and comparison of Bids which have passed the opening and preliminary examination of Bids, pursuant to **ITB** Clause 24, in order to determine the Lowest Calculated Bid.
- 27.2. In evaluating the Bids to get the Lowest Calculated Bid, the Procuring Entity shall undertake the following:
- (a) The detailed evaluation of the financial component of the bids, to establish the correct calculated prices of the bids; and
 - (b) The ranking of the total bid prices as so calculated from the lowest to highest. The bid with the lowest price shall be identified as the Lowest Calculated Bid.
- 27.3. The Procuring Entity’s BAC shall immediately conduct a detailed evaluation of all bids rated “passed,” using non-discretionary “pass/fail” criterion. Unless otherwise specified in the **BDS**, the BAC shall consider the following in the evaluation of bids:
- (a) Completeness of the bid. Unless the ITB specifically allows partial bids, bids not addressing or providing all of the required items in the Schedule of Requirements including, where applicable, bill of quantities, shall be considered non-responsive and, thus, 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 "0" (zero) for the said item would mean that it is being offered for free to the Procuring Entity; and

- (b) Arithmetical corrections. Consider computational errors, omissions, and other bid modifications, if allowed in the **BDS**, to enable proper comparison of all eligible bids. Any adjustment shall be calculated in monetary terms to determine the calculated prices.
- 27.4. 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 Lowest Calculated Bid. Total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, which exceed the ABC shall not be considered.
- 27.5. Unless otherwise indicated in the **BDS**, the Procuring Entity's evaluation of bids shall only be based on the bid price quoted in the Financial Bid Form
- 27.6. Bids shall be evaluated on an equal footing to ensure fair competition. 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 which shall be itemized in the bid form and reflected in the detailed estimates. Such bids, including said taxes, shall be the basis for bid evaluation and comparison.

28. Post Qualification

- 28.1. The Procuring Entity shall determine to its satisfaction whether the Bidder that is evaluated as having submitted the Lowest Calculated Bid (LCB) complies with and is responsive to all the requirements and conditions specified in **ITB** Clauses 5, 12, and 13.
- 28.2. Within a non-extendible period of three (3) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the LCB, the Bidder shall submit the following documentary requirements:
- (a) Latest income and business tax returns in the form specified in the **BDS**;
 - (b) Certificate of PhilGEPS Registration; and
 - (c) Other appropriate licenses and permits required by law and stated in the **BDS**.

Failure of the Bidder declared as LCB to duly submit the requirements under this Clause or a finding against the veracity of such, shall be ground for forfeiture of the bid security and disqualification of the Bidder for award.

- 28.3. The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted pursuant to **ITB** Clauses 12 and 13, as well as other information as the Procuring Entity deems necessary and appropriate, using a non-discretionary "pass/fail" criterion.
- 28.4. If the BAC determines that the Bidder with the Lowest Calculated Bid passes all the criteria for post-qualification, it shall declare the said bid as the Lowest Calculated Responsive Bid, and recommend to the Head of the Procuring Entity the award of contract to the said Bidder at its submitted price or its calculated bid price, whichever is lower, subject to **ITB** Clause 30.3.

- 28.5. A negative determination shall result in rejection of the Bidder's Bid, in which event the Procuring Entity shall proceed to the next Lowest Calculated Bid to make a similar determination of that Bidder's capabilities to perform satisfactorily. If the second Bidder, however, fails the post qualification, the procedure for post qualification shall be repeated for the Bidder with the next Lowest Calculated Bid, and so on until the Lowest Calculated and Responsive Bid is determined for contract award.
- 28.6. Within a period not exceeding seven (7) calendar days from the date of receipt of the recommendation of the BAC, the Head of the Procuring Entity shall approve or disapprove the said recommendation. In the case of government owned and government-owned and/or -controlled corporations (GOCCs) and government financial institutions (GFIs), the period provided herein shall be fifteen (15) calendar days.

29. Reservation Clause

- 29.1. Notwithstanding the eligibility or post-qualification of a bidder, the Procuring Entity concerned reserves the right to review its qualifications at any stage of the procurement process if it has reasonable grounds to believe that a misrepresentation has been made by the said bidder, or 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 affect its capability to undertake the project so that it fails the preset eligibility or bid evaluation criteria, the Procuring Entity shall consider the said Bidder as ineligible and shall disqualify it from submitting a bid or from obtaining an award or contract.
- 29.2. Based on the following grounds, the Procuring Entity 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;
 - (b) if the Procuring Entity's BAC is found to have failed in following the prescribed bidding procedures; or
 - (c) for any justifiable and reasonable ground where the award of the contract will not redound to the benefit of the Government as follows:
 - (i) If 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 head of the procuring entity;
 - (ii) If the project is no longer necessary as determined by the head of the procuring entity; and
 - (iii) If the source of funds for the project has been withheld or reduced through no fault of the Procuring Entity.

- 29.3. In addition, the Procuring Entity may likewise declare a failure of bidding when:
- (a) No bids are received;
 - (b) All prospective bidders are declared ineligible;
 - (c) All bids fail to comply with all the bid requirements or fail post-qualification; or
 - (d) The bidder with the Lowest Calculated Responsive Bid refuses, without justifiable cause to accept the award of contract, and no award is made.

F. Award of Contract

30. Contract Award

- 30.1. Subject to **ITB** Clause 28, the Procuring Entity shall award the contract to the Bidder whose Bid has been determined to be the Lowest Calculated and Responsive Bid (LCRB).
- 30.2. Prior to the expiration of the period of Bid validity, the Procuring Entity shall notify the successful Bidder in writing that its Bid has been accepted, through a Notice of Award received personally or sent by registered mail or electronically, receipt of which must be confirmed in writing within two (2) days by the LCRB and submitted personally or sent by registered mail or electronically to the Procuring Entity.
- 30.3. Notwithstanding the issuance of the Notice of Award, award of contract shall be subject to the following conditions:
- (a) Submission of the following documents within the prescribed period from receipt by the Bidder of the notice that it has the Lowest Calculated and Responsive Bid:
 - (i) Valid JVA, if applicable, within ten (10) calendar days;
 - (ii) Valid PCAB license and registration for the type and cost of the contract to be bid for foreign bidders, within thirty (30) calendar days, if allowed under a Treaty or International or Executive Agreement mentioned in **ITB** Clause 12.1(a)(iv);
 - (b) Posting of the performance security in accordance with **ITB** Clause 32;
 - (c) Signing of the contract as provided in **ITB** Clause 31; and
 - (d) Approval by higher authority, if required.

31. Signing of the Contract

- 31.1. At the same time as the Procuring Entity notifies the successful Bidder that its Bid has been accepted, the Procuring Entity shall send the Contract Form to the Bidder, which Contract has been provided in the Bidding Documents, incorporating therein all agreements between the parties.
- 31.2. Within ten (10) calendar days from receipt of the Notice of Award, the successful Bidder shall post the required performance security, sign and date the contract and return it to the Procuring Entity.

- 31.3. The Procuring Entity shall enter into contract with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.
- 31.4. 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;
 - (d) Performance Security;
 - (e) Credit line in accordance with ITB Clause 5.5, if applicable;
 - (f) Notice of Award of Contract; and
 - (g) Other contract documents that may be required by existing laws and/or specified in the **BDS**.

32. Performance Security

- 32.1. To guarantee the faithful performance by the winning Bidder of its obligations under the contract, it shall post a performance security within a maximum period of ten (10) calendar days from the receipt of the Notice of Award from the Procuring Entity and in no case later than the signing of the contract.
- 32.2. The performance security shall be denominated in Philippine Pesos and posted in favor of the Procuring Entity in an amount equal to the percentage of the total contract price in accordance with the following schedule:

Form of Performance Security	Amount of Performance Security (Equal to Percentage of the Total Contract Price)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Five percent (5%)
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	Thirty percent (30%)

- 32.3. Failure of the successful Bidder to comply with the above-mentioned requirement shall constitute sufficient ground for the annulment of the award and forfeiture of the bid security, in which event the Procuring Entity shall initiate and complete the post qualification of the second Lowest Calculated Bid. The procedure shall be repeated until the Lowest Calculated and Responsive Bid is identified and selected for contract award. However if no Bidder passed post-qualification, the

BAC shall declare the bidding a failure and conduct a re-bidding with re-advertisement.

33. Notice to Proceed

- 33.1. Within three (3) calendar days from the date of approval of the Contract by the appropriate government approving authority, the Procuring Entity shall issue its Notice to Proceed to the Bidder.
- 33.2. The date of the Bidder's receipt of the Notice to Proceed will be regarded as the effective date of the Contract, unless otherwise specified in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
1.1	<p>The PROCURING ENTITY is Philippine Ports Authority – Port Management Office of Marinduque/Quezon</p> <p>The name of the Contract is <u>Improvement of Quezon Port Project, Port of Quezon, Quezon Province.</u></p> <p>The identification number of the Contract is MRQ-C2020-01.</p>
2	<p>The Funding Source is:</p> <p>The Government of the Philippines (GOP) through the PPA Corporate Funds, Budget Year 2020 in the amount of ₱15,688,683.48.</p> <p>The name of the Project is <u>Improvement of Quezon Port Project, Port of Quezon, Quezon Province.</u></p>
5.1	No further instructions.
5.2	Bidding is restricted to eligible bidders as defined in ITB Clause 5.1
5.4	<p>The Bidder must have completed, within ten (10) years from the submission of bids, a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.</p> <p>For this purpose, similar contracts shall refer to refer to the contract to be bid if it has the same major categories of work.</p>
5.5	No further instructions.
6.3	No further instructions.
7	No further instructions.
8.1	Subcontracting is not allowed.
8.2	Not applicable
9.1	The Procuring Entity will hold a pre-bid conference for this Project on the date stated in the Invitation to Bid.
10.1	<p>The Procuring Entity's address is:</p> <p>Philippine Ports Authority-PMO Marinduque/Quezon Port Operation Building Brgy. Talao-talao, Port Area, Lucena City 4301 Philippines</p> <p>SHERWIN LEMUEL A. CHAVEZ BAC Chairperson e-mail: <u>pmomarquez.esd2018@gmail.com</u></p>

12.1	The first envelope shall contain the eligibility and technical documents stated in the ITB Clause. However, if the Bidder maintains a current and updated file of its Class "A" Documents with the Procuring Entity, a certification to that effect issued by its BAC may be submitted in lieu of the Class "A" Documents.
12.1(a)(i)	No other acceptable proof of registration is recognized.
12.1(a)(iii)	No further instructions.
12.1(a)(iv)	No further instructions.
13.1	"No additional Requirements"
13.2	The ABC is ₱ 13,883,790.69. Any bid with a financial component exceeding this amount shall not be accepted.
14.2	"No further instructions."
15.4	Bid Prices shall be fixed. Adjustable price proposals shall be treated as non-responsive and shall be rejected.
16.1	The bid prices shall be quoted in Philippine Pesos.
16.3	No further instructions.
17.1	Bids will be valid until One Hundred Eighty (180) c.d. from the date of the opening of bids.
18.1	No further instructions.
18.2	The bid security shall be valid for One Hundred Twenty (120) c.d. reckoned from the date of the opening of bids as indicated in the Invitation to Bid.
18.5(a)(iv)	The following shall be the additional grounds for forfeiture of the bid security: <ol style="list-style-type: none"> 1. Submission of eligibility requirements containing false information or falsified documents. 2. Submission of bids that contain false information or falsified documents, or the concealment of such information in the bids in order to influence the outcome of eligibility screening or any other stage of the public bidding. 3. Allowing the use of one's name, or using the name of another for purposes of public bidding. 4. Withdrawal of a bid, or refusal to accept an award, or enter into contract with the Government without justifiable cause, after the Bidder had been adjudged as having submitted the Lowest Calculated and Responsive Bid. 5. Refusal or failure to post the required performance security within

	<p>the prescribed time.</p> <ol style="list-style-type: none"> 6. Refusal 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. 7. Any documented unsolicited attempt by a bidder to unduly influence the outcome of the bidding in his favor. 8. Failure of the potential joint venture partners to enter into the joint venture after the bid is declared as successful. 9. All other acts that tend to defeat the purpose of the competitive bidding, such as habitually withdrawing from bidding, submitting late Bids or patently insufficient bid, for at least three (3) times within a year, except for valid reasons.
18.5(b)(iii)	No further instructions.
20.1	No further instructions.
20.3	Each Bidder shall submit One (1) original and Seven (7) copies of each of the first and second components of its bid.
21	<p>The address for submission of bids is as indicated in the Invitation to Bid.</p> <p>The deadline for submission of bids is as indicated in the Invitation to Bid.</p>
24.1	<p>The place of bid opening is as indicated in the Invitation to Bid.</p> <p>The date and time of bid opening is as indicated in the Invitation to Bid</p>
25.1	No further instructions.
27.3	No further instructions.
27.3(b)	Bid modification is allowed to determine the bid price as calculated.
27.5	No further instructions.
28.2(b)	<p>Only tax returns filed and taxes paid through the BIR Electronic Filing and Payment System (EFPS) shall be accepted.</p> <p>The latest income and business tax returns are those within the last six months preceding the date of bid submission.</p>
28.2(d)	No further instruction.
31.4(g)	<p>Other appropriate licenses and permits required by law and stated in the Bidding Documents:</p> <ol style="list-style-type: none"> (a) Tax Clearance (b) Latest Income Tax and Business Tax Returns (c) Certificate of PhilGEPS Registration (d) Construction Schedule, S-Curve, PERT/CPM Network Diagram (e) Manpower Schedule (f) Equipment Utilization Schedule

	(g) Construction Method in narrative form (h) Construction Safety and Health Program duly received by DOLE
33.2	The effective date of the Contract is upon receipt by the Bidder of the Notice to Proceed.

Section IV. General Conditions of Contract

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1. Definitions

For purposes of this Clause, boldface type is used to identify defined terms.

- 1.1. The **Arbiter** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC Clause 21.
- 1.2. **Bill of Quantities** refers to a list of the specific items of the Work and their corresponding unit prices, lump sums, and/or provisional sums.
- 1.3. The **Completion Date** is the date of completion of the Works as certified by the Procuring Entity's Representative, in accordance with GCC Clause 48.
- 1.4. The **Contract** is the contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works.
- 1.5. The **Contract Price** is the price stated in the Letter of Acceptance and thereafter to be paid by the Procuring Entity to the Contractor for the execution of the Works in accordance with this Contract.
- 1.6. **Contract Time Extension** is the allowable period for the Contractor to complete the Works in addition to the original Completion Date stated in this Contract.
- 1.7. The **Contractor** is the juridical entity whose proposal has been accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded.
- 1.8. The **Contractor's Bid** is the signed offer or proposal submitted by the Contractor to the Procuring Entity in response to the Bidding Documents.
- 1.9. **Days** are calendar days; months are calendar months.
- 1.10. **Dayworks** are 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.
- 1.11. A **Defect** is any part of the Works not completed in accordance with the Contract.
- 1.12. The **Defects Liability Certificate** is the certificate issued by Procuring Entity's Representative upon correction of defects by the Contractor.
- 1.13. The **Defects Liability Period** is the one year period between project completion and final acceptance within which the Contractor assumes the responsibility to undertake the repair of any damage to the Works at his own expense.
- 1.14. **Drawings** are 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.
- 1.15. **Equipment** refers to all facilities, supplies, appliances, materials or things required for the execution and completion of the Work provided by the Contractor and which shall not form or are not intended to form part of the Permanent Works.
- 1.16. 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's Representative by issuing an extension of time or an acceleration order.
- 1.17. **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.

- 1.18. The **Notice to Proceed** is a written notice issued by the Procuring Entity or the Procuring Entity's Representative to the Contractor requiring the latter to begin the commencement of the work not later than a specified or determinable date.
- 1.19. **Permanent Works** 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.
- 1.20. **Plant** refers to the machinery, apparatus, and the like intended to form an integral part of the Permanent Works.
- 1.21. The **Procuring Entity** is the party who employs the Contractor to carry out the Works stated in the SCC.
- 1.22. The **Procuring Entity's Representative** refers to the Head of the Procuring Entity or his duly authorized representative, identified in the SCC, who shall be responsible for supervising the execution of the Works and administering this Contract.
- 1.23. 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's Representative as forming part of the Site.
- 1.24. **Site Investigation Reports** are those that were included in the Bidding Documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- 1.25. **Slippage** is 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.
- 1.26. **Specifications** means the description of Works to be done and the qualities of materials to be used, the equipment to be installed and the mode of construction.
- 1.27. 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.
- 1.28. A **Subcontractor** is any person or organization to whom a part of the Works has been subcontracted by the Contractor, as allowed by the Procuring Entity, but not any assignee of such person.
- 1.29. **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Permanent Works.
- 1.30. **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's Representative; (iii) and the carrying out of all duties and obligations of the Contractor imposed by this Contract as described in the SCC.

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's Representative 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).

3. Governing Language and Law

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

4. Communications

Communications between parties that are referred to in the Conditions shall be effective only when 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's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.
- 5.2. If possession of a portion is not given by the date stated in the SCC Clause 5.1, 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 46.
- 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 his 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's Representative and any person authorized by the Procuring Entity's Representative 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's Representative, 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's Representative 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's Representative 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 his 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's Representative of such discoveries and carry out the Procuring Entity's Representative's instructions in dealing with them.

7. Performance Security

- 7.1. Unless otherwise specified in the SCC, 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 Contractor shall furnish the performance security in any the forms prescribed in ITB Clause 32.2.
- 7.2. 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.
- 7.3. The performance security shall remain valid until issuance by the Procuring Entity of the Certificate of Final Acceptance.

- 7.4. The performance security may be released by the Procuring Entity and returned to the Contractor after the issuance of the Certificate of Final Acceptance subject to the following conditions:
- (a) There are no pending claims against the Contractor or the surety company filed by the Procuring Entity;
 - (b) The Contractor has no pending claims for labor and materials filed against it; and
 - (c) Other terms specified in the SCC.
- 7.5. The Contractor shall post an additional performance security following the amount and form specified in **ITB** Clause 32.2 to cover any cumulative increase of more than ten percent (10%) over the original value of the contract as a result of amendments to order or change orders, extra work orders and supplemental agreements, as the case may be. The Contractor shall cause the extension of the validity of the performance security to cover approved contract time extensions.
- 7.6. 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.
- 7.7. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to Act 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

8. Subcontracting

- 8.1. Unless otherwise indicated in the SCC, the Contractor cannot subcontract Works more than the percentage specified in **ITB** Clause 8.1.
- 8.2. Subcontracting of any portion of the Works does not relieve the Contractor of any liability or obligation under this Contract. The Contractor will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants or workmen.
- 8.3. Subcontractors disclosed and identified during the bidding may be changed during the implementation of this Contract, subject to compliance with the required qualifications and the approval of the Procuring Entity.

9. Liquidated Damages

- 9.1. The Contractor shall pay liquidated damages to the Procuring Entity at the rate per day stated in the SCC for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the SCC. The Procuring Entity may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of this Contract, the Procuring Entity shall rescind this Contract, without prejudice to other courses of action and remedies open to it.

- 9.2. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer of the Procuring Entity shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Clause 39.1.

10. Site Investigation Reports

- 10.1. The Contractor, in preparing the Bid, shall conduct site inspection and investigation in order to determine the actual condition of project site. The Contractor may also inquire from the Procuring Entity site investigation report, if any.
- 10.2. The site inspection and investigation shall be conducted by the Contractor (President/General Manager/Authorized Managing Officer) or by the Project Manager or Project Engineer pledged/committed by the Contractor to the project to be bid.
- 10.3. The Certificate of Site Inspection shall be issued by the PPA Terminal Head (for PPA-manned ports) or by the Barangay Chairperson of the barangay/locality where the project is located (for unmanned ports).

11. The Procuring Entity, Licenses and Permits

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

12. Contractor's Risk and Warranty Security

- 12.1. The Contractor shall assume full responsibility for the Works from the time project construction commenced up to final acceptance by the Procuring Entity and shall be held responsible for any damage or destruction of the Works except those occasioned by *force majeure*. The Contractor shall be fully responsible for the safety, protection, security, and convenience of his personnel, third parties, and the public at large, as well as the Works, Equipment, installation, and the like to be affected by his construction work.
- 12.2. The defects liability period for infrastructure projects shall be one year from project completion up to final acceptance by the Procuring Entity. During this period, the Contractor shall undertake the repair works, at his own expense, of any damage to the Works on account of the use of materials of inferior quality within ninety (90) days from the time the Head of the Procuring Entity 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.
- 12.3. In case the Contractor fails to comply with the preceding paragraph, the Procuring Entity shall forfeit its performance security, subject its property (ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 12.4. After final acceptance of the Works by the Procuring Entity, the Contractor shall be held responsible for "Structural Defects", *i.e.*, major faults/flaws/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/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/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/Project Manager/Construction Managers and Supervisors – The project owner’s representative(s), project manager, construction manager, and supervisor(s) shall be held liable in cases where the Structural Defects/Failures are due to his/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/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.
- (e) Users - In cases where Structural Defects/Failures are due to abuse/misuse by the end user 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.

12.5. The warranty against Structural Defects/Failures, except those occasioned on 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.

12.6. The Contractor shall be required to put up a warranty security in the form of cash, bank guarantee, letter of credit, GSIS or surety bond callable on demand, in accordance with the following schedule:

Form of Warranty	Minimum Amount in Percentage (%) of Total Contract Price
(a) Cash or letter of credit issued by Universal or Commercial bank: provided, however, that the letter of credit shall be confirmed or authenticated by a Universal or Commercial bank, if issued by a foreign bank	Five Percent (5%)
(b) Bank guarantee confirmed by Universal or Commercial bank: provided, however, that the letter of credit shall be confirmed or authenticated by a Universal or Commercial bank, if issued by a foreign bank	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%)

12.7. The warranty security shall be stated in Philippine Pesos and shall remain effective for one year from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity, and returned only after the lapse of said one year period.

12.8. In case of structural defects/failure occurring during the applicable warranty period provided in GCC Clause 12.5, 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 filing of appropriate administrative, civil, and/or criminal charges against the responsible persons as well as the forfeiture of the warranty security posted in favor of the Procuring Entity.

13. 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.

14. Procuring Entity's Risk

14.1. 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 by or contracted to him 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.

15. Insurance

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

- (a) Contractor's All Risk Insurance;
- (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.

15.2. The Contractor shall provide evidence to the Procuring Entity's Representative 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's Representative. Such evidence and such policies shall be provided to the Procuring Entity's through the Procuring Entity's Representative.

15.3. 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's Representative 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's Representative.

- 15.4. If the Contractor fails to obtain and keep in force the insurances referred to herein or any other insurance which he may be required to obtain 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.
- 15.5. 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 39 until the Contractor complies with this Clause.
- 15.6. 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; or
 - (iv) been suspended by the Insurance Commission and its license to engage in business or its authority to issue insurance policies 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.

16. Termination for Default of Contractor

- 16.1. The Procuring Entity shall terminate this Contract for default when any of the following conditions attend its implementation:
- 16.2. 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 1870, regardless of whether or not previous warnings and notices have been issued for the Contractor to improve his performance;
- 16.3. Due to its own fault and after this Contract time has expired, the Contractor incurs delay in the completion of the Work after this Contract has expired; or

16.4. The Contractor:

- (a) abandons the contract Works, refuses or fails to comply with a valid instruction of the Procuring Entity or fails to proceed expeditiously and without delay despite a written notice by the Procuring Entity;
- (b) 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 Program of Work and equipment deployment schedule as required for the project;
- (c) does not execute the Works in accordance with this Contract or persistently or flagrantly neglects to carry out its obligations under this Contract;
- (d) neglects or refuses to remove materials or to perform a new Work that has been rejected as defective or unsuitable; or
- (e) sub-lets any part of this Contract without approval by the Procuring Entity.

16.5. All materials on the Site, Plant, Equipment, and Works shall be deemed to be the property of the Procuring Entity if this Contract is rescinded because of the Contractor's default.

17. Termination for Default of Procuring Entity

17.1. 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; or
- (b) 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.

18. Termination for Other Causes

18.1. The Procuring Entity may terminate this Contract, in whole or in part, at any time for its convenience. The Head of the Procuring Entity may terminate this Contract for the convenience of the Procuring Entity if he has determined the existence of conditions that make Project Implementation economically, financially or technically impractical and/or unnecessary, such as, but not limited to, fortuitous event(s) or changes in law and National Government policies.

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

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

- (c) The Procuring Entity shall terminate this Contract if the Contractor is declared bankrupt or insolvent as determined with finality by a court of competent jurisdiction. In this event, termination will be without compensation to the Contractor, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Procuring Entity and/or the Contractor. In the case of the Contractor's insolvency, any Contractor's Equipment which the Procuring Entity instructs in the notice is to be used until the completion of the Works;
- (d) A payment certified by the Procuring Entity's Representative is not paid by the Procuring Entity to the Contractor within eighty four (84) days from the date of the Procuring Entity's Representative's certificate;
- (e) The Procuring Entity's Representative 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's Representative;
- (f) The Contractor does not maintain a Security, which is required;
- (g) 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 Clause 9; and
- (h) In case it is determined prima facie by the Procuring Entity that the Contractor has engaged, before or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to, the following:
 - (i) corrupt, fraudulent, collusive and coercive practices as defined in ITB Clause 3.1(a);
 - (ii) drawing up or using forged documents;
 - (iii) using adulterated materials, means or methods, or engaging in production contrary to rules of science or the trade; and
 - (iv) any other act analogous to the foregoing.

18.4. The Funding Source or the Procuring Entity, as appropriate, will seek to impose the maximum civil, administrative and/or criminal penalties available under the applicable law on individuals and organizations deemed to be involved with corrupt, fraudulent, or coercive practices.

18.5. When persons from either party to this Contract gives notice of a fundamental breach to the Procuring Entity's Representative in order to terminate the existing contract for a cause other than those listed under GCC Clause 18.3, the Procuring Entity's Representative shall decide whether the breach is fundamental or not.

18.6. 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.

19. Procedures for Termination of Contracts

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

- (a) Upon receipt of a written report of acts or causes which may constitute ground(s) for termination as aforementioned, or upon its own initiative, the Implementing Unit shall, within a period of seven (7) calendar days,

verify the existence of such ground(s) and cause the execution of a Verified Report, with all relevant evidence attached;

- (b) Upon recommendation by the Implementing Unit, the Head of the Procuring Entity shall terminate this Contract only by a written notice to the Contractor conveying the termination of this Contract. The notice shall state:
 - (i) that this Contract is being terminated for any of the ground(s) afore-mentioned, and a statement of the acts that constitute the ground(s) 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) Within a period of seven (7) calendar days from receipt of the Notice of Termination, the Contractor shall submit to the Head of the Procuring Entity 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 Head of the Procuring Entity shall issue an order terminating the contract;
 - (d) The Procuring Entity may, at anytime before receipt of the Bidder's verified position paper to 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) Within a non-extendible period of ten (10) calendar days from receipt of the verified position paper, the Head of the Procuring Entity shall decide whether or not to terminate this Contract. It shall serve a written notice to the Contractor of its decision and, unless otherwise provided in the said notice, this Contract is deemed terminated from receipt of the Contractor of the notice of decision. The termination shall only be based on the ground(s) stated in the Notice to Terminate; and
 - (f) The Head of the Procuring Entity may create a Contract Termination Review Committee (CTRC) to assist him in the discharge of this function. All decisions recommended by the CTRC shall be subject to the approval of the Head of the Procuring Entity.
- 19.2. Pursuant to Section 69(f) of RA 9184 and without prejudice to the imposition of additional administrative sanctions as the internal rules of the agency may provide and/or further criminal prosecution 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, which include but not limited to the following:
- (a) Failure of the contractor, due solely to his 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 his fault or negligence as reflected in the Constructor's Performance Evaluation System ("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 constructor shall be construed as poor performance:
 - (i) Negative slippage of 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.

20. Force Majeure, Release From Performance

- 20.1. 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 the Contractor could not have foreseen, or which 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.
- 20.2. If this Contract is discontinued by an outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the

Procuring Entity's Representative shall certify that this Contract has been discontinued. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this 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.

- 20.3. 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.
- 20.4. 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 reasonably delivered to the Site, adjusted by the following:
 - (a) any sum to which the Contractor is entitled under GCC Clause 28;
 - (b) the cost of his suspension and demobilization;
 - (c) any sum to which the Procuring Entity is entitled.
- 20.5. The net balance due shall be paid or repaid within a reasonable time period from the time of the notice of termination.

21. Resolution of Disputes

- 21.1. If any dispute or difference of any kind whatsoever shall arise between the parties in connection with the implementation of the contract covered by the Act and this IRR, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.
- 21.2. If the Contractor believes that a decision taken by the PROCURING ENTITY's Representative was either outside the authority given to the PROCURING ENTITY's Representative by this Contract or that the decision was wrongly taken, the decision shall be referred to the Arbiter indicated in the SCC within fourteen (14) days of the notification of the PROCURING ENTITY's Representative's decision.
- 21.3. Any and all disputes arising from the implementation of this Contract covered by the R.A. 9184 and its IRR shall be submitted to arbitration in the Philippines according to the provisions of Republic Act No. 876, otherwise known as the "Arbitration Law" and Republic Act 9285, otherwise known as the "Alternative Dispute Resolution Act of 2004": *Provided, however, That, disputes that are within the competence of the Construction Industry Arbitration Commission to resolve shall be referred thereto. The process of arbitration shall be incorporated as a provision in this Contract that will be executed pursuant to the provisions of the Act and its IRR-A: Provided, further, That, by mutual agreement, the parties may agree in writing to resort to other alternative modes of dispute resolution. Additional instructions on resolution of disputes, if any, shall be indicated in the SCC.*

22. Suspension of Loan, Credit, Grant, or Appropriation

In the event that the Funding Source suspends the Loan, Credit, Grant, or Appropriation to the Procuring Entity, from which part of the payments to the Contractor are being made:

- (a) The Procuring Entity is obligated to notify the Contractor of such suspension within seven (7) days of having received the suspension notice.

- (b) If the Contractor has not received sums due it for work already done within forty five (45) days from the time the Contractor's claim for payment has been certified by the Procuring Entity's Representative, the Contractor may immediately issue a suspension of work notice in accordance with SCC Clause 44.2.

23. Procuring Entity's Representative's Decisions

- 23.1. Except where otherwise specifically stated, the Procuring Entity's Representative will decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity's
- 23.2. The Procuring Entity's Representative may delegate any of his duties and responsibilities to other people, except to the Arbitrator, after notifying the Contractor, and may cancel any delegation after notifying the Contractor.

24. Approval of Drawings and Temporary Works by the Procuring Entity's Representative

- 24.1. All Drawings prepared by the Contractor for the execution of the Temporary Works, are subject to prior approval by the Procuring Entity's Representative before its use.
- 24.2. The Contractor shall be responsible for design of Temporary Works.
- 24.3. The Procuring Entity's Representative's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 24.4. The Contractor shall obtain approval of third parties to the design of the Temporary Works, when required by the Procuring Entity.

25. Acceleration and Delays Ordered by the Procuring Entity's Representative

- 25.1. When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Procuring Entity's Representative 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.
- 25.2. 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.

26. Extension of the Intended Completion Date

- 26.1. The Procuring Entity's Representative 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. Unless specified in the SCC, no payment shall be made for any event which may warrant the extension of the Intended Completion Date.
- 26.2. The Procuring Entity's Representative shall decide whether and by how much to extend the Intended Completion Date within twenty one (21) days of the Contractor asking the Procuring Entity's Representative 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.

27. Right to Vary

27.1. The Procuring Entity's Representative with the prior approval of the Procuring Entity may instruct Variations, up to a maximum cumulative amount of ten percent (10%) of the original contract cost.

27.2. Variations shall be valued as follows:

- (a) At a lump sum price agreed between the parties;
- (b) where appropriate, at rates in this Contract;
- (c) in the absence of appropriate rates, the rates in this Contract shall be used as the basis for valuation; or failing which
- (d) at appropriate new rates, equal to or lower than current industry rates and to be agreed upon by both parties and approved by the Head of the Procuring Entity.

28. Contractors Right to Claim

If the Contractor incurs cost as a result of any of the events under GCC Clause 13, 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.

29. Dayworks

29.1. Subject to GCC Clause 42 on Variation Order, and if applicable as indicated in the SCC, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

29.2. All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Procuring Entity's Representative. Each completed form shall be verified and signed by the Procuring Entity's Representative within two days of the work being done.

29.3. The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

30. Early Warning

30.1. The Contractor shall warn the Procuring Entity's Representative 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. The Procuring Entity's Representative may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

30.2. The Contractor shall cooperate with the Procuring Entity's Representative 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's Representative.

31. Program of Work

- 31.1. Within the time stated in the SCC, the Contractor shall submit to the Procuring Entity's Representative for approval a Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 31.2. 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.
- 31.3. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program of Work within this period, the PROCURING ENTITY's Representative may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.
- 31.4. The Procuring Entity's Representative's approval of the Program of Work shall not alter the Contractor's obligations. The Contractor may revise the Program of Work and submit it to the Procuring Entity's Representative again at any time. A revised Program of Work shall show the effect of any approved Variations; and if allowed, any Compensation Event.
- 31.5. When the Program of Work is updated, the Contractor shall provide the Procuring Entity's Representative 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.
- 31.6. All Variations shall be included in updated Program of Work produced by the Contractor.

32. Management Conferences

- 32.1. Either the Procuring Entity's Representative 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.
- 32.2. The Procuring Entity's Representative 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 actions to be taken shall be decided by the PROCURING ENTITY's Representative either at the Management Conference or after the Management Conference and stated in writing to all who attended the Conference.

33. Bill of Quantities

- 33.1. The Bill of Quantities shall contain items of work for the construction, installation, testing, and commissioning of work to be done by the Contractor.
- 33.2. 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.
- 33.3. If the final quantity of any work done differs from the quantity in the Bill of Quantities for the particular item and is not more than twenty five percent (25%) of the original quantity, provided the aggregate changes for all items do not exceed ten percent (10%) of the Contract price, the Procuring Entity's

Representative shall make the necessary adjustments to allow for the changes subject to applicable laws, rules, and regulations.

- 33.4. If requested by the Procuring Entity's Representative, the Contractor shall provide the Procuring Entity's Representative with a detailed cost breakdown of any rate in the Bill of Quantities.

34. Instructions, Inspections and Audits

- 34.1. The Procuring Entity's personnel shall at all reasonable times during construction of the Work be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of the construction.
- 34.2. If the Procuring Entity's Representative 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. If there is no defect, the test shall be a Compensation Event.
- 34.3. 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.

35. Identifying Defects

The Procuring Entity's Representative 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's Representative may instruct the Contractor to search uncover defects and test any work that the Procuring Entity's Representative considers below standards and defective.

36. Cost of Repairs

Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability Periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

37. Correction of Defects

- 37.1. The Procuring Entity's Representative shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which begins at Completion Date up to final acceptance by the Procuring Entity's unless otherwise specified in the SCC. The Defects Liability Period shall be extended for as long as defects remain to be corrected.
- 37.2. Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified in the Procuring Entity's Representative's notice.
- 37.3. The Contractor shall correct the defects which he notices himself before the end of the Defects Liability Period.
- 37.4. The Procuring Entity shall certify that all defects have been corrected. If the Procuring Entity considers that correction of a defect is not essential, he can request the Contractor to submit a quotation for the corresponding reduction in the Contract Price. If the Procuring Entity accepts the quotation, the corresponding change in the SCC is a Variation.

38. Uncorrected Defects

- 38.1. The Procuring Entity shall give the Contractor at least fourteen (14) days notice of his 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.
- 38.2. 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.

39. Progress Payments

- 39.1. The Contractor may submit a request for payment for Work accomplished. Such request for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the SCC, materials and equipment delivered on the site but not completely put in place shall not be included for payment.
- 39.2. 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 for the month.
 - (c) Retention money in accordance with the condition of contract.
 - (d) Amount to cover third party liabilities.
 - (e) Amount to cover uncorrected discovered defects in the works.
- 39.3. 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's Representative within twenty eight (28) days from the date each certificate was issued. Unless otherwise indicated in the SCC, no payment of interest for delayed payments and adjustments shall be made by the Procuring Entity.
- 39.4. The first progress payment may be paid by the Procuring Entity to the Contractor provided that at least twenty percent (20%) of the work has been accomplished as certified by the Procuring Entity's Representative.
- 39.5. 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.

40. Payment Certificates

- 40.1. The Contractor shall submit to the Procuring Entity's Representative monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 40.2. The Procuring Entity's Representative shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 40.3. The value of Work executed shall:
 - (a) be determined by the Procuring Entity's Representative;

- (b) comprise the value of the quantities of the items in the Bill of Quantities completed; and
 - (c) include the valuations of approved variations.
- 40.4. The Procuring Entity's Representative 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.

41. Retention

- 41.1. 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 SCC Clause 41.2.
- 41.2. Progress payments are subject to retention of ten percent (10%), unless otherwise specified in the SCC, 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 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 again be imposed using the rate specified therefor.
- 41.3. 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 commercial bank, bank guarantees or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to the Procuring Entity, 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.
- 41.4. 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.

42. Variation Orders

- 42.1. Variation Orders may be issued by the Procuring Entity to cover any increase/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 Procuring Entity after award of the contract, provided that the cumulative amount of the Variation Order does not exceed ten percent (10%) of the original project cost. The addition/deletion of Works should be within the general scope of the project as bid and awarded. The scope of works shall not be reduced so as to accommodate a positive Variation Order. A Variation Order may either be in the form of a Change Order or Extra Work Order.
- 42.2. A Change Order may be issued by the implementing official to cover any increase/decrease in quantities of original Work items in the contract.

- 42.3. 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 were 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.
- 42.4. Any cumulative Variation Order beyond ten percent (10%) shall be subject of another contract 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 Head of the Procuring Entity may authorize a positive Variation Order go beyond ten percent (10%) but not more than twenty percent (20%) of the original contract price, subject to the guidelines to be determined by the GPPB: *Provided, however,* That appropriate sanctions shall be imposed on the designer, consultant or official responsible for the original detailed engineering design which failed to consider the Variation Order beyond ten percent (10%).
- 42.5. In claiming for any Variation Order, the Contractor shall, within seven (7) calendar days after such work has been commenced or after the circumstances leading to such condition(s) leading to the extra cost, and within twenty-eight (28) calendar days deliver a written communication giving full and detailed particulars of any extra cost in order that it may be investigated at that time. Failure to provide either of such notices in the time stipulated shall constitute a waiver by the contractor for any claim. The preparation and submission of Variation Orders are as follows:
- (a) If the Procuring Entity's representative/Project Engineer believes that a Change Order or Extra Work Order should be issued, he shall prepare the proposed Order accompanied with the notices submitted by the Contractor, the plans therefore, his computations as to the quantities of the additional works involved per item indicating the specific stations where such works are needed, the date of his inspections and investigations thereon, and the log book thereof, and a detailed estimate of the unit cost of such items of work, together with his justifications for the need of such Change Order or Extra Work Order, and shall submit the same to the Head of the Procuring Entity for approval.
 - (b) The Head of the Procuring Entity or his duly authorized representative, upon receipt of the proposed Change Order or Extra Work Order shall immediately instruct the technical staff of the Procuring Entity's to conduct an on-the-spot investigation to verify the need for the Work to be prosecuted. A report of such verification shall be submitted directly to the Head of the Procuring Entity or his duly authorized representative.
 - (c) The, Head of the Procuring Entity or his duly authorized representative, after being satisfied that such Change Order or Extra Work Order is justified and necessary, shall review the estimated quantities and prices and forward the proposal with the supporting documentation to the Head of Procuring Entity for consideration.
 - (d) If, after review of the plans, quantities and estimated unit cost of the items of work involved, the proper office of the procuring entity empowered to review and evaluate Change Orders or Extra Work Orders recommends approval thereof, Head of the Procuring Entity or his duly authorized representative, believing the Change Order or Extra Work Order to be in order, shall approve the same.

- (e) The timeframe for the processing of Variation Orders from the preparation up to the approval by the Head of the Procuring Entity concerned shall not exceed thirty (30) calendar days.

43. Contract Completion

Once the project reaches an accomplishment of ninety five (95%) of the total contract amount, the Procuring Entity may create an inspectorate team to make 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 considering the approved remaining contract time. This, however, shall not preclude the claim of the Procuring Entity for liquidated damages.

44. Suspension of Work

44.1. 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 events 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.

44.2. The Contractor or its duly authorized representative shall have the right to suspend work operation on any or all projects/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 make it extremely dangerous, if not possible, to work. However, this condition must be certified in writing by the Philippine National Police (PNP) station which has responsibility over the affected area and confirmed by the Department of Interior and Local Government (DILG) Regional Director.
- (d) There is 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 to by the procuring entity's authorized representative that the documents are complete unless there are justifiable reasons thereof which shall be communicated in writing to the Contractor.

44.3. 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 effective order of suspending operation and the order to resume work shall be allowed the Contractor by adjusting the contract time accordingly.

45. Payment on Termination

- 45.1. If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Procuring Entity's Representative 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.
- 45.2. If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Procuring Entity's Representative 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.
- 45.3. The net balance due shall be paid or repaid within twenty eight (28) days from the notice of termination.
- 45.4. If the Contractor has terminated the Contract under GCC Clauses 17 or 18, the Procuring Entity shall promptly return the Performance Security to the Contractor.

46. Extension of Contract Time

- 46.1. Should the amount of additional work of any kind or other special circumstances of any kind whatsoever occur such as to fairly entitle the contractor to an extension of contract time, the Procuring Entity shall determine the amount of such extension; provided that the Procuring Entity is not bound to take into account any claim for an extension of time unless the Contractor has, prior to the expiration of the contract time and within thirty (30) calendar days after such work has been commenced or after the circumstances leading to such claim have arisen, delivered to the Procuring Entity notices in order that it could have investigated them at that time. Failure to provide such notice shall constitute a waiver by the Contractor of any claim. 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 completing the contract work when, in the Procuring Entity's opinion, the findings of facts justify an extension.
- 46.2. No extension of contract time shall be granted the Contractor due to (a) ordinary unfavorable weather conditions and (b) inexcusable failure or negligence of Contractor to provide the required equipment, supplies or materials.
- 46.3. Extension of contract time may be granted only when the affected activities fall within the critical path of the PERT/CPM network.
- 46.4. 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.
- 46.5. Extension of contract time shall be granted for 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 for equivalent period of delay due to major calamities such as exceptionally destructive typhoons, floods and earthquakes, and epidemics, and for causes 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 within the right-of-way resulting in complete paralyzation of construction activities, and other meritorious causes as determined by the Procuring Entity's Representative and approved by the Head of the Procuring Entity. 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. The written consent of bondsmen 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.

47. Price Adjustment

Except for extraordinary circumstances as determined by NEDA and approved by the GPPB, no price adjustment shall be allowed unless otherwise specified in the SCC.

48. Completion

The Contractor shall request the Procuring Entity's Representative to issue a certificate of Completion of the Works, and the Procuring Entity's Representative will do so upon deciding that the work is completed.

49. Taking Over

The Procuring Entity shall take over the Site and the Works within seven (7) days from the date the Procuring Entity's Representative issues a certificate of Completion.

50. Operating and Maintenance Manuals

- 50.1. If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.
- 50.2. 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 Representative's approval, the Procuring Entity's Representative shall withhold the amount stated in the SCC from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
1.16	The Intended Completion Date is within <u>One Hundred Eighty Calendar Days (180 c.d.)</u> starting from the effectivity of the contract.
1.21	The Procuring Entity is <i>Philippine Ports Authority- Port Management Office of Marinduque/Quezon, Port Operation Building Brgy. Talao-talao, Port Area, Lucena City 4301 Philippines</i>
1.22	The Procuring Entity's Representative is: <i>Engr. Raul A. Libatique, Acting ESD Manager Port Management Office of Marinduque/Quezon, Port Operation Building Brgy. Talao-talao, Port Area, Lucena City 4301 Philippines</i>
1.23	The Site is located at <u>Port of Quezon, Quezon Province</u> and is defined in the plans/drawings (vicinity map).
1.27	The Start Date shall be commence at the time of receipt of the Notice to Proceed by the Contractor.
1.30	The Works involves the <i>The project involves the construction of back-up area (30m x 12m) with concrete stairlanding (20 ln.m.)</i> .
2.2	Not applicable.
5.1	The Procuring Entity shall give possession of all parts of the Site to the Contractor upon effectivity of the Contract or upon receipt of the Notice to Proceed by the Contractor.
6.5	The Contractor shall employ the following Key Personnel : <ol style="list-style-type: none"> 1. Project Manager 2. Project Engineer 3. Materials Engineer 4. Foreman 5. Const. Safety & Health Personnel
7.1	No further instructions.
7.4(c)	No further instructions.
8.1	No further instructions.
9.1	The applicable liquidated damages is at least one tenth (1/10) of one percent of the cost of the unperformed portion for every day of delay. The maximum deduction shall be ten percent (10%) of the amount of the contract, the Procuring Entity shall rescind the contract, without prejudice to other courses of action and remedies open to it.
10.1	The site investigation reports are: <i>None</i> .
10.3	<i>The Certificate of Site Inspection shall be issued by Brgy. Chairman or Municipal Mayor.</i>
12.5	<i>In case of permanent structures, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures: Fifteen (15) years.</i>

	<p><i>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/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.</i></p> <p><i>In case of other structures, such as Bailey and wooden bridges, shallow wells, spring developments, and other similar structures: Two (2) years.</i></p>
13	<p>No additional provision.</p> <p>For Joint Venture, "All partners to the joint venture shall be jointly and severally liable to the Procuring Entity."</p>
21.2	The Arbiter is an <i>accredited arbiter as agreed upon by the contracting parties.</i>
21.3	No further instructions.
26.1	No further instructions.
29.1	Day works are applicable at the rate shown in the Contractor's original Bid.
31.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within <i>Fifteen (15) days</i> of delivery of the Letter of Acceptance.
31.3	<p>The period between Program of Work updates is <i>Sixty (60) days.</i></p> <p>The amount to be withheld for late submission of an updated Program of Work is <i>One-tenth of one percent (1/10 of 1%) of the amount of his succeeding billing claim.</i></p>
34.7	The Funding Source is the <i>Government of the Philippines, PPA Corporate Funds CY 2020.</i>
37.1	No further instructions.
40.1	No further instructions.
40.3	No further instructions.
42.2	No further instructions.
48	No further instructions.
51.1	The date by which "as built" drawings are required is <i>Fifteen (15) days after project completion.</i>
51.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is <i>One-tenth of one percent (1/10 of 1%) of the amount of the final billing.</i>

Section VI. Technical Specification

TECHNICAL SPECIFICATIONS

IMPROVEMENT OF QUEZON PORT PROJECT PORT OF QUEZON, QUEZON PROVINCE

I. REMOVAL, DEMOLITION & DISPOSAL

1.1 SCOPE

The work includes the furnishing of all labor, materials and equipment required to carry out the demolition and removal of obstructions, portions of existing piers including extraction/cutting of timber and R.C. piles at required depth and demolition of miscellaneous buildings, pavements, fences, utilities, navigation aids and wrecks etc., as required for the execution of the Contract.

The Contractor shall submit the proposed methodology or procedure of demolition work with detailed drawings and calculations if necessary, to the Engineer for approval, before the execution of the works.

The Contractor shall keep all pavements and landing areas to and from the site of the disposal area clean and free of mud, dirt and debris during and after the execution of disposal. Disposal of debris and materials shall be as directed by the Engineer. For off-shore obstructions to pile driving and dredging, survey shall be executed by the Contractor with the Engineer before any demolition and removal of wrecks is commenced and shall be as directed by the Engineer.

1.2 OWNERSHIP OF DEMOLISHED MATERIAL

Materials coming from the demolition works shall be properly disposed by the Contractor. Reusable materials shall remain the property of the Authority and shall be stored properly by the Contractor at a place designated by the Engineer.

1.3 INTERFERENCE WITH PORT OPERATIONS

During the execution of the work, the Contractor shall not interfere with the shipping, navigation and other traffic in the port.

The Contractor shall make arrangements with the operations people on the schedule of demolition and related works to keep port operation activities undisturbed at all times.

Prior to commencement of the demolition works, the Contractor shall inform/announce to port users the schedule of disconnection of utilities.

1.4 EXECUTION

- a. Prior to the commencement of demolition works, the alignments of the new construction works to existing pier shall be checked.
- b. The width and alignment of portion of existing structure to be demolished shall be marked by paint.
- c. With these lines as guides, concrete shall be broken and reinforcing bars cut, such that panels or portions of the structure can be lifted out for disposal elsewhere outside of the operational work area.
- d. Extract concrete piles with care in order not to damage existing or adjacent structures, equipment or materials.

specification and shall have the power to reject any work and materials which in his judgement, are not in full accordance therewith.

7.8 TESTING OPERATIONS

When the electrical installation is completed, the Contractor shall test the installed electrical materials and equipment in the presence of Registered Electrical Engineer or Master Electrician. The system shall be free from any defects, shorts or grounds. All necessary instruments and personnel required for the testing shall be furnished by the Contractor at no extra cost to the Authority.

7.9 GUARANTEE

Upon completion and before final acceptance of the work, the Contractor shall furnish the Engineer a written guarantee stating that all works executed are free from defects on materials and workmanship. The guarantee shall be for a period of one year from the date of the final acceptance. Any work that becomes defective during the said period shall be corrected / replaced by the Contractor at his own expense in a manner satisfactory to the Authority.

7.10 AS-BUILT DRAWINGS

Upon completion and before final acceptance of work, the Contractor shall prepare, at his own expense, submit to the Engineer as-built drawings incorporating all approved changes, omissions and/or addition to the contract drawings, one (1) printed copies of as-built drawings together with their reproducible originals at no extra cost to the Authority.

DUCTBANK

The contractor shall construct underground ductbank of individual conduit encased in concrete as shown in the drawing.

EXECUTION

- a. The Contractor shall furnish and install electrical materials as shown in the drawings. A licensed Electrical Engineer or Master Electrician is required to implement the installation of the electrical system. A licensed electrical contractor shall oversee/conduct the installation of the Main Circuit Breaker above 200 amperes.
- b. Electrical installation shall conform to the requirements of Philippine Electrical Code (PEC) and the other approved standards.
- c. The contractor shall install all electrical works with the supervision of the qualified Registered Electrical Engineer (REE) or Master Electrician. All electrical installation applications regardless of capacity and voltage whether new, addition or revision shall be accompanied by electrical plans signed and sealed by a duly licensed Professional Electrical Engineer (PEE).

7.6 INSTALLATION

Lamp Post: shall be mounted/ anchored to a reinforced concrete foundation with base plates, anchor bolts standard nuts and washers as shown in the drawing.

Pole Setting: Depth as shown in the drawing.

Construction of reinforced concrete lamp post foundation , handholes and ductbank with steel covers shall be in accordance with the shape and dimensions as shown in the drawing.

Excavations / backfilling required before /after installation of lamp post and parking area lighting and trench shall conform to the provisions of Earthwork and Concrete Construction.

Grounding : Each lamp post shall be grounded at the base by ground lugs and ground conductor connected to a ground electrode . The grounding electrodes shall be cone pointed, sectional copper clad steel 15 mm dia. by 1000 mm meter long.

7.7 WORKMANSHIP

The work throughout shall be executed in the best and most thorough manner under the direction of and at the satisfaction of the Registered Electrical Engineer or Master Electrician, who will interpret the intent meaning of the drawings and

7.4 PRODUCTS

WIRES AND CABLES

The conductor material to be furnished and installed shall be of copper wire Heat Resistant Thermoplastic type "THHN ". All conductors shall be rated 600 volts insulation and shall be standard for all sizes.

LIGHTING FIXTURES AND ACCESSORIES

Fixture shall conform to NEMA standard as illustrated in the plans. Illustration shall be indicative of the desired general type and shall not restrict selection of fixture to any particular manufacturer. Locally fabricated or manufactured fixture of similar design with equivalent light distribution and brightness characteristics having equal finish and quality, shall be acceptable as approved.

Integrated Solar Power Lighting Assembly -

Solar Module Type	120 Watts Monocrystalline or Equivalent
Service Life	25 Years
Battery Type	Life PO4 (Lithium Phosphate), 12.8V, 57AH
Service Life	6 Years
Charge Time	6 - 8 Hours (Depending on Irradiation Levels)
Discharge Time	15 Hours Full Power / 30 Hours Half Power
LED Lamp	12V, 70 Watts
Lumens	10,000 - 10,800 lm
Viewing Angle	120 Degrees
Service Life	50,000 Hours (11 Years @ 12 Hours per Night)
Working Temperature	-30°C / 70°C
Color	6500K - 7000K
Mounting Height	7 - 10 Meters
Distance Range	23 - 35 Meters
Warranty	3 Years
Certificates	CE / ROHS / IP65
Product Weight	27 Kg

LAMP POST

The lamp post/s shall be furnished installed and tested for the perimeter and park lighting as shown in the plans. The post/s . shall be dimensioned for a wind velocity of 185 km/hr. It shall be locally fabricated or manufactured. The post shall be zinc electroplated, prime-coated with red lead and shall be painted at site with the final coating preferably aluminum paint to be approved by the Engineer.

HANDHOLE

The handhole shall be of the type noted in the drawings and shall be constructed in accordance with the applicable details as indicated.

Manufacture, Catalog Model or Number, Nameplate Data, Size, Layout Dimensions, Capacity, Project Specification and Paragraph Reference, Technical Society Publication References and other information necessary to establish contract compliance of each item to be furnished.

- e) All excavations, fill and backfill and concrete works involved herein, shall be carried to the required elevations and shall conform to the provisions of specification under Earthwork and Concrete Construction of this tender document.
- f) The materials and equipment to be furnished shall be standard products of reputable manufacturer engaged in the reproduction of such materials and equipment.
- g) All permits and electrical fees required for this work shall be obtained at the expense of the Contractor. The Contractor shall furnish the Engineer-in-Charge, the final Certificates of Inspections and approval from the proper government authorities after the completion of work. The Contractor shall prepare all as-built plans and all other paper works as required by the enforcing authorities.

7.3 MATERIALS REQUIREMENT

- a. All electrical materials, fixtures and equipment under by this Contract shall be furnished and installed by the Contractor.
- b. All materials, fixtures and equipment to be supplied shall be as shown in the drawings and shall be in accordance with the requirements of these specifications which shall apply to manufacturing, testing and supply of same materials and equipment.
- c. All electrical materials whether specifically described or not shall be of the best grade and all workmanship shall be of first class in every aspect.

All electrical equipment and materials supplied shall be suitable in every respect for operation in a hot tropical climate near the sea and suitable for operation at ambient temperature up to 40° C.

Any electrical materials and equipment found not meeting the requirements of relevant standards, or of these specifications shall be rejected by the Engineer.

All materials used in this Contract shall meet the requirements described in this specification, or otherwise approved by the Engineer and shall comply with the approved standard.

7. ELECTRICAL WORKS

7.1 SCOPE OF WORK

- a) The work to be done shall consist of fabricating, trenching, furnishing, delivering and installing of electrical materials/fixtures completed in accordance with all the details of the electrical works as shown on the drawings including materials, labor, tools and equipment and all incidental works as found necessary.
- b) Refer to electrical plans/drawings for location and extent of work involved.

7.2 GENERAL REQUIREMENTS

- a) All works shall be done in accordance with the requirements of the publications and agencies having jurisdiction, as well as the requirements of the approved standards.
 1. National Fire Protection Association - (NFPA)
 2. National Electrical Manufacturer Association - (NEMA)
 3. Underwriter Laboratories, Inc. - (UL)
 4. Philippine Electrical Code - (PEC)
Philippine National Standard - (PNS)
 5. Federation Specification :
Circuit Breaker, Molded Case, Branch
Circuit and Service
 6. American National Standard Institute - (ANSI)
 7. American Society for Testing and Materials - (ASTM)
 8. Illuminating Engineering Society - (IES)
- b) The electrical power will be tapped from the nearest available utility company power system. The Contractor shall coordinate the exact route of the supply cable and distribution with the PPA Engineer and authorized/proper authority in the area Voltages shall be 220 volt, single phase, 60 Hertz, AC.
- c) The Contractor shall employ a licensed Registered Electrical Engineer or Master electrician to perform or to supervise and to conduct for continuous inspection of all electrical work.
- d) The Contractor shall first obtain approval from the Authority before procurement, fabrication or delivery of electrical materials to the site. Partial submittals will not be acceptable and will be returned without review. Submittals shall include the Manufacturer's Name, Trade Name, Place of

The exposed surface shall be coated with rust proof paint and finishing paint, which shall be coal-tar epoxy of 120 micron thickness in accordance with JIS K5623 or the approved standard.

- b) Concrete foundations/base of posts shall conform to the requirements of Section 4, "Reinforced Concrete."

- c) Visual Inspection

All mooring posts delivered to site shall be inspected by the Engineer for any signs of flaws or defects inimical to usage.

- d) Mill Test Certificates

Two (2) copies of mill test reports shall be submitted certifying that materials meet the specified standards.

- e) Tests and Inspection

Inspection of all materials and methods of fabrication shall be carried out by the Contractor. However, the Engineer reserves the right to inspect all facilities at any time during the manufacture to ensure that the materials and workmanship are in accordance with the specifications and the best workmanship.

6.3 EXECUTION

1. All mooring posts shall be installed at the locations shown on the drawings and in accordance with the approved manufacturer's recommendations and shop drawings, and as directed by the Engineer.

6.4 MEASUREMENT AND PAYMENT

1. Measurement and payment of the quantities of mooring posts shall each be based on the number of sets of mooring posts completely installed (excluding concrete base/foundation) with anchor bolts and certified by the Engineer.

Reinforced concrete base/foundation of mooring posts to be installed on piers shall not be paid separately and such shall be included under pay-item for Concrete Works of rock causeway.

Separate measurement shall be made for reinforced concrete base/foundation of mooring posts to be installed on structures other than pier which shall be paid for per cubic meters of concrete and per kilograms of reinforcing bars.

2. Payment stated above shall be full compensation for all labor materials and equipment and all preparatory and incidental works necessary to complete the work.

Drawings. No separate measurement and payment will be made for miscellaneous item such as dowel bar joint sealer, joint filler, etc., cost of such items are deemed included in the cost of Portland cement concrete pavement.

6. MOORING SYSTEM

6.1 SCOPE OF WORK

1. The work includes finishing of all labor materials and equipment to complete the installation of mooring posts in rock causeway
2. The Contractor shall furnish and install the necessary fittings for a complete job as shown on the drawings and/or as specified.

Supplementary parts necessary to complete and install each item of works shall be included whether or not shown or specified. The Contractor shall furnish to relevant trades all anchors, fastenings, inserts, fittings, fixtures or the like to be installed on or required for securing the works.

The Contractor shall submit shop drawings of all fitting works prior to placing orders and commencement of any fabrication.

6.2 MATERIALS REQUIREMENTS

6.2.1 MOORING SYSTEM

1. Mooring posts shall be of the dimensions, weights capacities and design in accordance with shop drawings approved b the Engineer and shall be fabricated by approved manufacturers wit cast steel conforming to the following requirements or approve equivalent.

Part	Spec. (JIS or its equivalent)	Grade
Body	JIS G5101 3	Grade SC46
Anchor	JIS G3101 2	Grade SS41
Bolts	JIS B0205	M64-6
Nut	JIS B1181 1	Grade 1
	Class 3	4T, N64-6
Washer	Jis b1256	Steel Bars
Foundation Plate	Jis g3101 2 or JIS G5101	Grade SS41 Grade 3 SC46

The size of the bolts, nuts and washers shall be in accordance with the specifications of the manufacturer. However, the length of the bolts shall be as indicated on the drawings. The anchor plate shall be connected to the holding down bolt with 12.5 mm weld, as shown on the drawings. All bolts, nuts, washers, etc. that are exposed shall be galvanized to the satisfaction of the Engineer. Provide lead cover for exposed threads of galvanized anchor bolts.

Samples of the bolts, nuts, washers and anchor plates shall be submitted to the Engineer for approval before being used in the Works.

- a) The upper parts of mooring posts not embedded in concrete shall be painted. The surface of bollards and bitts shall be cleaned thoroughly by wire brush or other means prior to painting to remove rust or any other contamination which may interfere with bond of paint to metal.

5.3.4.12 Pavement Smoothness, Thickness and Tolerance

Portland cement concrete pavement shall be constructed to the designed level and transverse slope shown on the Drawing. The allowable tolerance shall be as listed hereunder:

- | | |
|---|----------|
| a) Permitted variation from design thickness of layer | + - 5mm |
| b) Permitted variation from design level of surface | + - 5mm |
| c) Permitted surface irregularity measured by 3m straightedge | + - 6mm |
| d) Permitted variation from design cross fall or camber | + - 0.2% |

5.4 MEASUREMENT AND PAYMENT

5.4.1 General

Measurement for payment shall be made in accordance with each particular item of works listed in the Bill of Quantities.

Each item listed shall be paid for in the appropriate unit price per quantity measured and accepted. Payments shall constitute M1 compensation for all labor, materials and equipment and all incidentals necessary to complete the work.

Cost for trial sections and all necessary test to be performed in accordance with this Section shall be included in the unit price for each item listed in the Bill of Quantities.

5.4.1.1 Subgrade Preparation

The quantity of subgrade preparation to be paid for shall be measured in square meters of area prepared, graded, compacted, tested and accepted by the Engineer.

5.4.1.2 Aggregate Subbase Course

Aggregate subbase to be paid for shall be measured by the volume in cubic meters of aggregate subbase supplied, placed and compacted as shown on the Drawings and accepted by the Engineer. No payment will be made for materials placed outside the design limits shown on the cross sections.

5.4.1.3 Crushed Aggregate Base Course

Measurement and payment for crushed aggregate base course shall be made by the volume in cubic meter of crushed aggregate base supplied, placed and compacted as shown on the Drawings and accepted in completed base course. No payment will be made for materials placed outside the design limit shown on the cross sections!

5.4.1.4 Portland Cement Concrete Pavement

The quantities of, Portland cement concrete pavement to be paid shall be measured by the- area of the top surface in square meters, calculated from its width and length of the designated thickness as shown on the

capable of operating in a position that will strike off the concrete at a sufficient height above the top of the forms to allow for proper compaction with the vibrating pan. This type of vibratory finishing machine shall be operated in such manner that each section of pavement will receive at least one vibratory pass but not more than two passes, unless otherwise

After the final pass of the finishing machine and when the concrete has to dry, the surface of the pavement shall be finished with an approved longitudinal float. The float may be operated either manually or by mechanical means. The float may be either of wood or metal, shall be straight and smooth and light in weight so as not to displace or sink into the concrete surface.

To be effective, the float shall be at least 300mm wide and 3m long. When manually operated, the float shall be moved from edge to edge with a wiping motion and advance one (1) meter or more.

The succeeding trip shall overlap the previous trip, A light smoothing lute at least 3 meters long may be used provided approved by the Engineer.

The surface of the pavement shall be tested by the Contractor, before the final belting, with an approved standard straightedge 3 meter in length. Irregularities so detected shall be corrected immediately. Special attention shall be given to the concrete adjacent to transverse joints to insure that the edges thereof are not above the grade specified or the adjacent concrete below grade, All depressions or projections shall be corrected before any initial set has developed in the concrete.

After the concrete has been brought to the required grade, contour and smoothness, it shall be finished by passing over the concrete a drag of one or

5.3.4.11 Opening to Traffic

The pavement shall be closed to traffic, including the vehicles of the Contractor, for a period of 10 days after the concrete is placed or longer if in the opinion of the Engineer, the weather conditions make it necessary to extend this time. The Contractor shall furnish, place and maintain satisfactory barricades and lights as directed, to exclude all traffic from the pavement.

Any damage to the pavement due to traffic shall be repaired or replaced at the expense of the Contractor. Paving mixers, mechanical concrete spreaders and finishers and other heavy paving equipment shall not be operated on completed concrete lanes in order to construct alternate lanes until after the regular curing period is completed. Even then, planks shall be laid on the finished pavement or other precautions taken to prevent damage to the concrete pavement.

The Contractor shall provide suitable equipment for protecting the fresh concrete in case of rain, such as screens which will cause the rain water to run off beyond the edges of the paving, rain proof tarpaulins or other methods approved by the Engineer. The equipment shall be sufficient to shelter from rain all areas equal to that paved in two hours of work.

5.3.4.7 Finishing Concrete

The concrete shall be compacted and finished by a mechanical, self-propelled finishing machine of approved type, having two independently operated screeds. If a machine possessing only one screed is approved, the screed will not be less than 450 mm. wide and shall be equipped with compensating springs to minimize the effect of the momentum of the screed on the side forms. The number of driving wheels, the weight of the machine and the power of the motor shall be so coordinated as to prevent slippage. The top of the forms and the surface of the finishing machine wheels shall be kept free from concrete or dirt.

The machine shall at all times be in first-class mechanical condition and shall be capable of compacting and finishing the concrete as herein described. Any machine which causes displacement of the side forms from the line or grade to which they have been properly set, or causes undue delay due to mechanical difficulties, shall be removed from the work and replaced by a machine meeting the Specifications,

The finishing machine shall be operated over each section of pavement two or more times and at such intervals as will produce the desired results. Generally, two passes of the finishing machine are considered the maximum desirable.

The concrete shall be vibrated, compacted, and finished by a vibratory finishing machine. The vibratory machine shall meet the requirements for ordinary finishing, and shall be one of the following type:

The machine shall have two independently operated screeds, the front screed shall be equipped with vibratory units with a frequency of not less than 3,500 pulsation per minute. There shall be not less than one vibratory unit for each 2.5 meters length or portion thereof, of vibratory screed surface. The front screed shall not be less than 300mm wide and shall be equipped with a "bull nose" front edge built on a radius of not less than 5 Gram. This type of vibratory finishing machine shall be operated in such manner that each section of pavement will receive at least one vibratory pass, but not more than two passes, unless otherwise

The machine shall be equipped with an independently operated vibratory "pan" (or pans) and two (2) independently operated screeds, the "pan" shall be mounted in a manner that will permit it to come in contact with the forms and will permit vibration of the full width of lane simultaneously.

There shall be not less than one vibratory unit for each 2 m. length or portion thereof, of vibrating pan surface. The vibratory units in any individual pan shall be synchronized and have a frequency of not less than 3,500 pulsations per minute. The front screed shall be

substituted therefore which shall fit snugly over the top edge of the joint strip and shall remain until the joint is edged. Filler shall extend the full width of the concrete being placed less 10 mm and after the side forms have been removed, any concrete which has flowed around the ends of the joint filler shall be removed.

5.3.4.6 Placing Concrete

The concrete shall be deposited and spread in order that segregation will not occur and place a uniform layer of concrete whose thickness is approximately 20 mm greater than that required for the finished pavement is placed. Rakes shall not be used for handling concrete.

In order to prevent the introduction into the concrete of earth and other foreign materials, the men whose duties require them to work in the concrete, shall in general, confine their movements to the area already covered with fresh concrete. Whenever it becomes necessary for these men to step out of the concrete, their footwear shall be washed or otherwise thoroughly cleaned before returning to the concrete. Repeated carelessness with regard to this detail will be deemed sufficient cause for removing and replacing such worker.

During the operation of striking off the concrete, a uniform ridge of concrete at least 70 mm in height shall be maintained ahead of the strike-off screed for its entire length. Except when making a construction joint, the finishing machine shall at no time be operated beyond that point where this surplus can be maintained in front of the strike-off screed.

After the first operation of the finishing machine, additional concrete shall be added to all low places and honeycombed spots and the concrete rescreened. In any rescreening, a uniform head of concrete shall be maintained ahead of the strike-off for its entire length. Honeycombed spots shall not be eliminated by tamping or grouting.

Workers on the job shall have mobile footbridges at their disposal so that they need not walk on the wet concrete.

In conjunction with the placing and spreading, the concrete shall be thoroughly spaded and vibrated along the forms, bulkhead, and joints.

The internal vibrators shall be of pneumatic, gas-driven, or electric type, and shall operate at a frequency of not less than 3,200 pulsation per minute.

Whenever the placing of the concrete is stopped or suspended for any reason, for a period of 30 minutes or longer, a suitable bulkhead shall be placed so as to produce a vertical transverse joint. If an emergency stop occurs within 2.5 meters of the contraction or an expansion joint the concrete shall be removed back to the joint. When the placing of the concrete is resumed, the bulkhead shall be removed and a new concrete placed and vibrated evenly and solidly against the face of previously deposited concrete. Any concrete in excess of the amount needed to complete a given section, or that has been deposited outside the forms shall not be used in the work.

After installation of the joint material, the concrete shall be free of segregation, rock pockets or voids and the finished concrete surface on each side of the joint shall be in the same plane. Splices in the joint material shall not be permitted.

The Contractor shall maintain a standby multiple-bladed power joint saw, in operating condition, at the project site at all times while concrete paving operation are underway, regardless of the type of contraction joint being constructed.

At the option of the Contractor, longitudinal contraction joints at traffic lanes in multi-lane monolithic concrete pavement may be formed by placing a continuous strip of plastic or other material which will not react adversely with the chemical constituents of the concrete. The joint insert material shall be of such width and character that when placed vertically in the concrete it will not bond with the concrete and will form an effective contraction joint; of 50 mm. minimum depth. The joint material shall be inserted with a mechanical device that places the material in a continuous strip, except where intervening structure break the continuity of paving. Splices in the joint material will be permitted provided that they are effective in maintaining the continuity of the joint material as placed. The joint material shall be placed in such manner that the top of the strip is not more than 3 mm below the finished surface of the concrete. The joint material shall not be deformed from the vertical position, either in the installation or in subsequent finishing operations performed on the concrete.

The alignment of the finished joint shall be uniformly parallel with the center line of the pavement and shall be free of any local irregularity which exceeds 10 mm. The mechanical installation device shall vibrate the concrete during placing of the strip sufficiently to cause the concrete to flow evenly about the joint materials producing homogenous concrete free of segregation and rock pockets or voids.

c.) Transverse Expansion Joints

Transverse expansion joints shall be formed at structure approaches as shown in the Drawings.

Transverse expansion joints shall be formed by means of pre-molded expansion joint filler. The joint strips shall be firmly supported in position by metal holders and end supports. The support shall be held firmly in position and shall remain in place after completion of the

The metal holders shall be fabricated of steel sheet not less than 2 mm thick. They shall be in the form of deep channel, extending down on both sides of the joint strip to depth of not less than 100 mm. They shall be slotted and cut away as necessary, to allow the concrete to make contact with the joint strip at close intervals. The ends of the holders shall be spread to admit the end supports. During placing and compacting the concrete, the joint holder and end supports shall be secured so as to ensure against movement of the joint strip and to keep the top edge of the joint strip approximately 10 mm below the surface of the finished pavement.

After the concrete has been placed and compacted, the metal holder may be removed and suitable shallow metal channel

a.) Longitudinal and Transverse Contact Joints

Longitudinal contact joints are joints formed between lanes that are poured separately. Transverse contact joints are joints formed between segments of a lane that are poured separately. Transverse contact joints shall be formed perpendicular to \ pavement centerline at the end of each day of concrete placing, or where concreting has been stopped for 30 minutes or longer but not nearer than 1.5 meters from sawed contraction joints. All contact joints shall have faces perpendicular to the surface of the pavement. Tie bars of the size, length and spacing shown on the Drawings shall be placed across longitudinal and transverse contact joints.

b.) Contraction Joints

Contraction joints shall be formed by cutting a groove in the pavement with a power driven saw at the locations shown on the Drawings. The grooves shall be cut to a minimum width possible with the type of saw being used, but in no case shall the width exceed 5 mm. Every fourth planned transverse weakend plane joint in the initial lane of concrete and also the first joint immediately after the transverse contact joint, shall be sawed within 24 hours after the concrete has been placed, the exact time to be determined by the Engineer.

Every second planed transverse contraction joint shall be sawed within 48 hours after placing the concrete, the exact time to be determined by the Engineer,

The remaining longitudinal and transverse contraction joints may be sawed at such time, after 24 hours, as the Contractor may elect, except that they shall be completed before placing concrete in succeeding adjacent lanes and before permitting the Contractor's traffic or public traffic to use the pavement. ij \

In succeeding lanes of concrete pavement, the transverse joints opposite those which have opened in the initial lane shall be sawed within 24 hours after the concrete has been place, the exact time to be determined by the Engineer, but in all cases not more than 3 consecutive planed transverse contraction joints; shall be omitted.

No sawing shall be done where volunteer transverse crack exist/ If a transverse crack falls within 1.5 meter of the location of a proposed sawed joint, the sawed joint be omitted.

At the option of the Contractor, transverse contraction joints may be formed by placing a continuous strip of plastic or other material which will not react adversely with the chemical constituents of the concrete or bond with the concrete] The strip shall have a minimum thickness of 0.4 mm and a width of not less than 50 mm nor more than 55 mm. After placement, the vertical axis of the joint material shall be within 10 degrees of a plane normal to the surface of the pavement. The top of the strip shall not be above or more than 5 mm below the finished pavement surface. Final alignment of the strip shall conform to that shown on the transverse contraction joints and shall not vary more than 20 mm from the edge of a 3 mm straightedge; The strip shall be placed by means of a mechanical installation device which shall vibrate the plastic sufficiently to cause an even flow of concrete about the joint

5.3.4 Portland Cement Concrete Pavement

5.3.4.1 Concrete Class

The concrete for pavement shall satisfy the following requirements :

Minimum 28-day comprehensive strength	-	24 MPA
Maximum aggregate size	-	38mm
Maximum water cement ratio	-	0.45

Proportioning, Consistency and Mixing of Concrete

The proportioning, consistency and mixing of concrete shall conform to the requirements of "Reinforced Concrete".

5.3.4.3 Preparation

The base shall be watered and thoroughly moistened prior to placing of the concrete.

5.3.4.4 Formwork Construction

Forms shall be of steel, of an approved section and shall be straight and of a depth equal to thickness of the pavement at the edge. The base of the forms shall be of sufficient width to provide necessary stability in all directions. The flange braces must extend outward on the base not less than $\frac{2}{3}$ the height of the form.

All forms shall be rigidly supported on a bed of thoroughly compacted material during the entire operation of placing and finishing the concrete. They shall be set with their faces vertical so as to produce a surface complying with the required tolerance. |

Adjacent lanes may be used in lieu of forms for supporting finishing equipment provided that proper protection is afforded to the concrete of the adjacent lanes to prevent damage, and provided further that the surface of the concrete carrying the, finishing equipment does not vary by more than 3mm in each meter length, adjacent lanes in lieu of forms may not be used until the concrete is at least seven (7) days old. Flanged wheels of the finishing equipment shall not be operated on the concrete surface. The inside edge of supporting wheels of the finishing machine shall not operate closer than 100mm from the edge of the concrete lane.

Alternative to placing forms, slip-forming may be used. Slip-form paving equipment shall be equipped with the traveling side forms of sufficient dimensions, shape and strength to support the concrete laterally for a sufficient length of time during placement to produce pavement of the required cross section. No abrupt changes in longitudinal alignment of the pavement will be permitted. The horizontal deviation shall not exceed 20mm from the proper alignment established by the Engineer.

5.3.4.5 Joints

All joints, longitudinal, transverse, etc., shall be constructed as shown on the Drawings and shall be clean and free of all foreign material after completion of shoulder work prior to acceptance of the work and in accordance with the following provisions:

5.3.2.5 Tolerance

Aggregate sub-base shall be spread, with equipment that will provide a uniform layer which: when compacted will conform to the designed level and transverse slopes as shown on the Drawings. The allowable tolerance shall be as specified hereunder:

a) Permitted variation from Thickness of layer	+10mm - 20mm
b) Permitted variation from design level 01 surface	+10mm - 20mm
c) Permitted surface irregularity measured by 3-m straight-edge	+10mm - 20 mm
d) Permitted variation from design cross-fall or camber	+ - 0.3%
e) Permitted variation from Design longitudinal grade Over 25m length	+ - 0.1%

5.3.3 Crushed Aggregate Base Course

5.3.3.1 Prior work

Crushed aggregate base course shall be placed on top of completed and accepted sub-base course.

5.3.3.2 Spreading and Compacting

The field density required for each layer is not less than 100% of the maximum dry density as determined in accordance with AASHTO 180 Method D. The field density shall be determined in accordance with AASHTO T 191 every 300 sq.m. of compacted base course,

5.3.3.3 Tolerance

The crushed aggregate base course shall be laid to the designed level and transverse slopes shown on the Drawing. The allowable tolerance shall be in accordance with the following;

a) Permitted variation from Thickness of layer	+ - 10 mm
b) Permitted variation from design level of surface	+ 5 mm - 10mm
c) Permitted surface irregularity measured by 3-m straight-edge	+ - 5 mm
d) Permitted variation from design crossfall or camber	+ - 0.2%
e.) Permitted variation from Design longitudinal grade Over 25 m length	+ - 0.1%

5.3.2.3 Spreading and Compacting

When uniformly mixed, the mixture shall be spread to the plan thickness for compaction. When the required thickness is 150mm or less, the material may be spread and compacted in one layer. Where the required thickness is more than 150mm, the aggregate sub-base shall be spread and compacted in two or more layers of approximately equal thickness and the maximum compacted thickness of any one layer shall not exceed 150mm. All subsequent layers shall be spread and compacted in similar manner.

The moisture content of sub-base material shall be adjusted prior to compaction by watering with approved sprinklers mounted on tracks or by drying out as required in order to obtain the required density.

Immediately following final spreading and leveling, each layer shall be compacted to the full width by means of approved compacted equipment. Rolling shall progress gradually from the sides to the center, parallel to the centerline of the road and shall continue until the whole surface has been rolled. Any irregularities or depressions that develop shall be corrected by loosening the material at these places and adding or removing material until the surface is smooth and uniform. Along curbs, headers and walls and at all places not accessible to the roller, the sub-base material shall be compacted thoroughly with approved mechanical tampers or compactors.

If the layer of sub-base material or part thereof, does not conform to the required finish, in the opinion of the Engineer, the Contractor shall, at his own expense, make the necessary corrections.

Compaction of each layer shall continue until field density of at least 100 percent of the maximum dry density determined in accordance with AASHTO 1905 Method D has been achieved. In-place density determination shall be made in accordance with AASHTO T 191 for every 300 square meters.

5.3.2.4 Trial Sections

Before sub-base construction is started, the Contractor shall spread and compact trial section directed by the Engineer. The purpose of the trial section is to check the suitability of the material and the efficiency of the equipment and construction method which is proposed to be used by the Contractor. Therefore, the Contractor must use the same for the same material, equipment and procedures that he proposed to use for the main work. One trial section of about 500 sq.m. shall be made for every type of material and/or construction equipment/procedure proposed for use.

After final compaction of each trial section, the Contractor shall carry out such density tests and other tests required as directed by the Engineer.

If a trial section that the proposed materials, equipment or procedures, in the Engineer's opinion, are not suitable for sub-base, the material shall be removed at the Contractor's expense, and a new section shall be constructed.

If the basic conditions regarding the type of material or procedure change during the execution of the work, new trial section shall be constructed.

area that can be maintained with the equipment available. He shall arrange for sub-grade preparation and sub-base placing to follow each other closely.

The sub-grade when prepared too soon in relation to the laying of the sub-base, is liable to deteriorate, and in such case, the Contractor shall, without additional payment, repair, re-roll or re-compact the sub-grade as may be necessary to restore it to the state specified herein.

5.3.1.7 Templates and Straightedges

The Contractor shall provide for the use of the Engineer, satisfactory templates and straightedges in sufficient numbers to check the accuracy of the works, as provided in Specification.

5.3.1.8 Sub-grade Tolerance

The finished compacted surface of the sub-grade shall conform to the allowable tolerance as specified hereunder:

- | | |
|--|------------------|
| a) Permitted variation from design level of surface | + 20mn
- 30mn |
| b) Permitted surface irregularity measured by 3m straightedge | 30mm |
| c) Permitted variation from design cross-fall or camber | + - 0.5% |
| d) Permitted variation from design longitudinal grade over 25mn length | + - 0.1% |

5.3.2 Aggregate Sub-base Course

5.3.2.1 Preparation of Existing Surface

The existing surface shall be graded and finished before placing the sub-base material.

5.3.2.2 Placing

The aggregate sub-base material shall be placed as a uniform mixture on a prepared sub-grade in a quantity which will provide the required compacted thickness. When, more than one layer is required, each layer shall be shaped and compacted before the succeeding layer is placed.

Placing of material shall begin at the point designated by the Engineer. Placing shall be from vehicles especially equipped to distribute the material in a continuous uniform layer or windrow. The layer or windrow shall be such size that when spread and compacted the finished layer shall be reasonably in close conformity to the nominal thickness shown on the Drawings.

When hauling is done over previously placed material, hauling equipment shall be dispersed uniformly over the entire surface of the previously constructed layer to minimize rutting or uneven compaction.

5.3.1.3 Sub-grade on Fill

After the fill has been completed, the foil width shall be conditioned by removing any soft or other unstable material that will not be compacted properly. The resulting areas all other low sections, holes or depressions shall be brought to grade with suitable materials. The entire roadbed shall be then shaped and compacted. Scarifying, blading, dragging, rolling or other methods of works shall be performed or used as necessary to provide a thoroughly compacted roadbed shaped to the cross section

5.3.1.4 Sub-grade of Existing Pavement

Where the new pavement is to be constructed immediately after removal of an existing concrete pavement and if so specified in the contract, the slab shall be broken into pieces with greatest dimension not more than 500 mm and the existing pavement re-compacted or disposed of as directed by the Engineer. The resulting sub-grade level shall, as part of pavement construction be shaped to conform to the required tolerances by placing and compacting where necessary a leveling course comprising of materials of the pavement course to be placed immediately above.

Where the new pavement is to be constructed immediately over an existing asphalt or concrete pavement and if so specified in the Drawings, the pavement shall be broken-up, scarified, thoroughly loosened, reshaped and re-compacted. The resulting sub-grade level shall conform to the allowable tolerance.

5.3.1.5 Proof

Unless otherwise ordered by the Engineer, a variable-load pneumatic tired roller shall be used to proof roll the sub-grade. The roller shall have a load variable within the range of (at least) from 10 to 45 tons, on an overall width not greater than 3.2 m and shall have tires whose pressures are variable up to not less than 620 KN per square meter. The wheels shall be in one row and shall be capable of considerable vertical movement relative to each other without appreciable variation in loading either by each supporting a separate ballast unit, or by virtue of an efficient interconnecting suspension system. The ballast shall be in a form which permits rapid adjustment of load.

The total loaded weight and tire pressure used at any time shall be as directed by the Engineer. The pneumatic tired roller shall not be towed over completed sub-base or surfacing without prior approval of the Engineer on each occasion. The proof rolling shall consist of one pass of the roller along the center of each lane of the traveled way.

5.3.1.6 Protection of Completed Works

Any part of the sub-grade that has been completed shall be protected and any damage resulting from negligence on the part of the Contractor shall be repaired by Mm as directed by the Engineer without additional payment.

The Contractor shall be responsible for all the consequence of traffic being admitted to the sub-grade. He shall repair any ruts or ridges occasioned by his own traffic or that of others by reshaping and re-compacting. He shall limit the amount of sub-grade preparation to an

d.) Water

Clean, fresh, potable water shall be used for the mixing of all concrete and mortar and shall be from a source approved by the Engineer. Sea water or brackish water shall not be used.

e.) Admixture

Admixture shall only be used with the written permission of the Engineer. If air-entraining agents, water reducing agents, set retarders or strength accelerators are permitted to be used, they shall not be used in greater dosages than those recommended by the manufacturer, or as permitted by the Engineer. The cost shall be considered as already in the Contractor's unit cost bid for concrete.

f.) Tie Bars and Dowels

Tie bars for joints shall be deformed steel bars conforming to the requirements specified in AASHTO M 31 or equivalent, sizes as indicated on the Drawings or as approved by the Engineer. The deformed steel bars shall be Grade 40 and shall be shipped in standard bundles, tagged and marked in accordance with the Code of Standard practice of the Concrete Reinforcement Steel Institute.

Dowel bars shall be plain steel bars conforming to the requirements specified in AASHTO M 31 or equivalent.

g.) Joint Filler

Poured filler for joint shall conform to the requirements of AASHTO M 73.

Preformed fillers for joints shall conform to the requirements of AASHTO M 33, AASHTO M 153, AASHTO M 213 or AASHTO M 220 whichever is specified in the Drawings or ordered by the Engineer. The filler for each joint shall be furnished in single piece for the depth and width required for the joint unless otherwise authorized by the Engineer.

5.3 METHOD OF CONSTRUCTION

5.3.1 Sub-grade Preparation

5.3.1.1 Prior Works

The Contractor shall clear all areas for roads and surfacing of all trees, stumps, bush, roots vegetation and other objectionable materials. All culverts, cross drains, ducts (including their fully compacted backfill), ditches, drains and drainage outlets shall be completed before commencing the preparation of sub-grade.

5.3.1.2 Sub-grade in Cutting of Common Material

Unless otherwise specified, all materials below sub-grade level in earth cuttings to a depth of 150 or other depth shown on the Drawings or as directed by the Engineer shall be excavated. The materials, if suitable, shall be placed to one side for future use. Unsuitable filling materials shall be disposed of properly outside the area of work.

When material has been removed from sub-grade level, the base of the resulting cut shall be compacted to a depth of 150 mm to a uniform density of not less than 95 mass percent of the maximum as determined by AASHTO T 99 Method C.

Table B Base Course Grading Requirements

Sieve Designation Standard MM	Alternative US Standard	Mass Percent Passing	
		Grading A	Grading B
37.5	1-1/2"	100	-
25.0	1"	-	100
19.0	3/4"	60 - 85	-
12.5	1/2"	-	60 - 90
4.75	No. 4	30 - 55	35 - 65
0.425	No. 40	8 - 25	10 - 30
0.075	No. 200	2 - 14	5 - 15

The portion of the material passing the 0.75 mm (No. 200) sieve shall not be greater than 0.067 (two-thirds of the fraction passing the 0.425 mm (No. 40) sieve.

The portion of the material passing the 0.425 (No. 40) sieve shall have a liquid limit of not more than 25 and a plasticity index of not more than 6 as determined by AASHTO and 90, respectively.

The coarse aggregate retained on a 2.00 mm (No. 10) sieve shall have a mass percent of wear not exceeding 45 by the Los Angeles Abrasion Test as determined by AASHTO T 96, and not less than 50 mass percent shall have at least one (1) fractured face.

The material shall have a loss of less than 12 percent when subject to five cycles of the Sodium Sulfate Soundness Test according to AASHTO T 104.

The material passing the 19 mm (3/4 inch) sieve shall have a minimum soaked CBR-value of 80% tested according to AASHTO T 193. The CBR-value shall be obtained at the maximum dry density determined according to AASHTO T180, Method D.

If filler, in addition to that naturally present, is necessary to meet the grading requirements or for satisfactory bonding, it shall be uniformly blended with the crushed base course material on the road or in a pugmill unless otherwise specified or approved. Filler shall be obtained from sources approved by the Engineer, free from hard lumps and shall not contain more than 15 percent of material retained on the 4.75 mm (NO. 4) sieve.

5.2.4 Portland Cement Concrete Pavement

a.) Cement

Portland cement shall conform to the requirements of Section 4 "Reinforced Concrete".

b.) Fine Aggregate

The fine aggregate shall be well-graded from coarse to fine and shall

c.) Coarse Aggregate

Coarse aggregate shall conform to the requirements of Section 4.

5.2.2 Aggregate Subbase Course

Aggregates for subbase shall consist of hard, durable particles or fragments of crushed stone, crushed sand or other finely divided mineral matter. The composite materials shall be free from vegetable matter and lump or balls of clay, and shall be of such nature that can be compacted readily to form a firm, stable base.

The subbase material shall conform to the grading requirements given in Table A.

Table A. Subbase Grading Requirements

Sieve Designation Standard MM	Alternative US Standard	Mass Percent Passing
50.0	2"	100
25.0	1"	55-85
9.5	3/8"	40-75
0.075	No. 200	0-12

The fraction passing the 0.075 mm (No. 200) sieve shall not be greater than 0.67 (two-thirds) of the fraction passing the 0.425 mm (No. 40) sieve.

The fraction passing the 0.425 mm (No. 40) sieve shall have a liquid limit not greater than 25 and plasticity index not greater than 6 as determined by AASHTO T 89 and 90, respectively!

The coarse portion, retained on a 2.0 mm (No. 10) sieve, shall have a mass percent of wear not exceeding 50 by the Los Angeles Abrasion Test as determined by AASHTO T 96.

The material shall have a soaked CBR value of not less than 25% as determined by AASHTO T 193. The CBR value shall be obtained at the maximum dry density as determined by AASHTO T 180, method D.

5.2.3 Crushed Aggregate Base Course

It shall consist of hard, durable particles or fragments of stone or gravel crushed to the size and of the quality requirements of this Clause. It shall be clean and free from vegetable matters, lumps or balls of clay and other deleterious substance's. The material shall be of such nature that it can be compacted readily to form a firm, stable base.

The base material shall conform to the grading requirements of Table B whichever is called for in the Bill of-Quantities.

- e.) Deposition of concrete shall be in such a way as to prevent segregation of the materials and the displacement of the reinforcement. Placing shall be done preferably with the use of buggies, buckets or wheel-borrows. Troughs, conveyors and pipes and the manner of use of each one shall be with the expressed permission of the Engineer.
- f.) Each layer of concrete shall be placed approximately normal as possible in uniform layers not exceeding 0.30 meter, unless otherwise ordered. The rate of placing concrete in the forms shall preferably be 0.025 meter (0.082 feet) vertical rise per minute.

4.9 CONSTRUCTION JOINT

During stoppage of concrete pouring operations, and when jointing of old concrete becomes necessary, the following point should be observe:

- a.) Construction joint not indicated in the drawings shall be located as to least affect the strength of the structure. Such locations will be as pointed out by the Engineer.

4.10 FORMS AND FALSEWORK

All forms and falsework to be used in the work must be designed, and constructed by the Contractor, for rigidity and adequacy for carrying the loads of the fresh concrete and/or additional superimposed construction loads. The Authority may from time to time verify the adequacy and safety of such temporary works and may require the Contractor to submit detailed designed drawings of forms and falseworks proposed to be used. Approval of such drawings or design of forms, however, shall not relieve the Contractor of his liability on resulting imperfections or damages to the finished concrete, or other damages which may directly result therefrom.

Forms may be re-used but shall be scrapped by a wire brush of all clinging mortar. Bulges should be planed and realigned prior to its use.

Prior to placing concrete form surfaces should be oiled for easy form removal. However, the oil coating should not be so thick as to stain and soften the concrete surface. Oil coatings should be applied before rebars are placed.

5. CONCRETE PAVEMENT

5.1 SCOPE OF WORK

The works include the furnishing of all labor, materials and equipment required for the preparation of subgrade, construction of subbase course, base course, asphalt pavement and concrete pavement together with concrete curb and gutter and sidewalks. The works shall be in accordance with the lines and grades shown on the Drawings or as directed by the Engineer and in conformity with these Specification.

5.2 MATERIALS REQUIREMENTS

4.2.1 Subgrade

Unless otherwise stated in the Contract and except when the Subgrade is in rock cut, all materials below subgrade level to a depth of 150mm or to such greater depth as may be specified shall meet the requirements of specifications of Reclamation & Fill.

4.6 CONCRETE PROPORTION AND CONSISTENCY

Concrete proportion should produce mix consistencies that will work readily into angles and corners of the forms and around reinforcements irrespective of the method of placing employed, without permitting the materials to segregate or excess water to collect on the surface of the concrete and with separated individual particles of aggregates showing coating of mortar with proportionate amount of sand. The total aggregate in the proportion used shall be such that when sieved, the weight passing the No.4 standard sieve shall be thirty percent (30) of the total.

The methods used for measuring materials going into the concrete mix shall permit easy checking and control of proportions at any time during the work.

4.7 MIXING OF CONCRETE

All concrete used shall be machine-mixed at the site. Each batch shall be mixed at the mixer's design speed, for at least 1-1/2 minutes after all concrete materials are simultaneously placed in the mixer. The ideal rotation speed of the mixer shall be between 14 and 20 rpm.

All mix contents of the mixer shall be thoroughly removed before any succeeding batch is placed.

The materials for the first batch shall contain sufficiently excess cement, sand and water to coat the inside walls of the mixer without reducing the required mortar content of the mix.

The mixer shall be provided with devices for accurately measuring and controlling the amount of water used in each batch and for automatically recording the number of revolutions of the mixer.

Hand mixing of concrete will only be allowed in case of mixer breakdown, in which case it shall be stopped as soon as pouring for the particular section is completed, or at a construction joint as directed by the Engineer.

Re-tempering or remixing of partially hardened concrete with the addition of water will not be permitted.

4.8 PLACING OF CONCRETE

- a.) Concrete shall be placed in the presence of the Engineer only after the forms, reinforcing bars and other spaces to receive the concrete have been inspected and approved by him.
- b.) Concrete shall be placed only when wind and weather conditions will allow proper placement and curing of the concrete. Notice of any concreting operations shall be served to the Engineer at least three (3) days ahead of each schedule.
- c.) Mixed concrete shall be deposited in its final position within a practicable time. Each succeeding fresh deposit for particular structural member shall be placed at a practicable rate to prevent cold joints. Each successive fresh deposit of concrete shall be vibrated vertically at uniformly spaced points and levels, of such duration and intensity to compact the concrete thoroughly but shall be discontinued the moment segregation of materials is noticed.
- d.) Where concreting operations involve a fall more than 1.50 meters (4.92 feet), the fresh concrete shall be poured through approved sheet metal conduit or pipes. The pipes shall be kept full of concrete and its lower end kept below the surface of concrete throughout the pouring operations.

d.) Admixtures

Unless otherwise required by field conditions admixtures may be used subject to the expressed approval of the Engineer. The cost thereof shall be considered as already included in the unit cost bid of the Contractor for the concrete.

4.3 STORAGE OF MATERIALS

- a.) Cement shall be stockpiled as closely as possible in weatherproof storage sheds, stacks suitably elevated above ground to prevent cement absorption of moisture.
- b.) Aggregates shall be placed in stockpile in a manner preventing segregation thereof and contamination with foreign materials.
- c.) Reinforcing steel bars shall be stored properly, covered and protected from humidity to prevent rusting and contamination with oil, dirt or other objectionable matters.

4.4 DESIGNED STRENGTH OF CONCRETE

Concrete for structural parts or members such as bearing piles or columns shall develop a minimum 28-day compressive cylinder strength of 4,500 psi., and for deck or floor slabs, beams and girders of the structure shall develop a minimum 28-day compressive cylinder strength of 3,500 psi., unless otherwise indicated in the drawings.

Concrete for non-structural parts or members such as partition walls and slab on fill shall develop a minimum 28-day cylinder strength of 3,000 psi., unless otherwise indicated in the drawings.

4.5 TRIAL BATCH FOR CONCRETE

Thirty (30) calendar days before the start of concreting works, the Contractor shall submit design mixes and the corresponding test result made on sample thereof. Sampling and testing shall be in accordance with the ASTM Standard procedures for sampling and testing, for the particular design strength(s) required.

The particulars of the mix such as the slump and the proportionate weights of cement, saturated surface dry aggregates and water used shall be stated. Test results shall show 28-day strength(s) fifteen (15) percent higher than the ultimate strength(s) required.

The design mix for concrete to be used shall be submitted together with at least three (3) standard cylinder samples for approval at least one (1) month prior to the start of each concreting schedule. Such samples shall be prepared in the presence of the Engineer.

Standard laboratory strength test for the 7, 14 and 28 days periods shall be taken to all concrete samples in addition to routine field tests, at cost to the Contractor. Only design mixes represented by test proving the required strength for 7, 14 and 28 days tests shall be allowed.

The cost of sampling, handling and transporting samples from jobsite to the laboratory and the cost of subsequent tests made until the desired mix is attained shall be for the account of the Contractor.

instructions.

- c.) The Engineer reserves the right to sample geotextile delivered to site for individual quality control testing at the contractor's expense. Materials not meeting the manufacturer's certified values will be rejected from the site.
- d.) The geotextile shall be proven to resist dynamic puncture damage when subject to impact stress from stone armor (200-400 kg.) dropped from a minimum height of 2.0m. Geotextile failing to resist puncture shall not be accepted.
- e.) To facilitate site Quality Assurance, each roll of geotextile delivered to site shall be clearly labelled with brand name, grade, and production batch number and this information is required to be clearly printed at regular intervals along the entire length of each roll.
- f.) Geotextiles overlaps shall be at least 1.0m when installed underwater -and 0.35m for installation in dry conditions unless otherwise stated on the drawings. Alternatively, geotextile overlaps are to be heat-welded or sewn using appropriate polypropylene or other synthetic thread and portable hand sewing equipment. Joint seams shall meet or exceed 80 of the fabric's tensile strength.
- g.) The quantities of geotextile to be paid for shall be the net covered area completed in place, accepted, and measured in final portion. All overlap requirements laying cost shall be included at the unit bid for the item. Geotextile (Filter Fabric) shown in the Contractor price schedule.

4. REINFORCED CONCRETE

4.1 GENERAL

All works falling under this category shall include reinforced concrete for all kinds and parts of any reinforced concrete structure.

4.2 MATERIALS

a.) Cement

Cement used shall be Type I Portland conforming to the requirements of the latest revision of ASTM C 150 "Standard Specifications for Portland Cement".

b.) Coarse Aggregates

Coarse Aggregates shall be washed, well graded, hard pieces of gravel, crushed gravel or rock conforming to the requirements of ASTM C 33 "Standard Specification for Concrete Aggregates".

c.) Fine Aggregates

Fine Aggregates shall be washed sand, stone screenings or other inert materials of same characteristics, or any combination thereof composed clean, hard, strong, uncoated grains and free from injurious amount of dust, lumps of clay, shale, alkali, and organic matter. It shall conform to the requirements of ASTM C33 "Standard Specifications for Concrete Aggregates". Beach sand shall not be used unless approved by the Engineer.

- c.) Heat-bonded geotextile and geotextile manufactured from staple (short), waste, recycled, or mixed raw materials fibers not derived from single-source polymer will be rejected.
- d.) The geotextile must be ultra violet stabilized and the manufacturer shall certify that the quality of polymer used in the manufacture of the geotextile is such that retention of at least 80 of original tensile strength values after 3 months continuous exposure to natural sunlight will be achieved.
- e.) Fibers used in the manufacture of the geotextile shall be resistant to long-term contact with damp cementations substrates or acid or alkali leachate solutions in the pH range 2-13.
- f.) Where the geotextile is required as a filter in silty soil conditions., the minimum porosity of geotextile shall be >80.

3.4 MECHANICAL AND HYDRAULIC PROPERTIES

The geotextile supplier is required to certify that materials delivered to site will be proven to meet or exceed the following properties:

Minimum Normal Mass

(ISO-9.864) 400 g/sq.m.

Tensile Strength (MB/CD)

(ISO 10319) 24/24 kN/m

Tensile Elongation (MD/CD)

(ISO 10319) 90/40%

Effective Opening Size 090 wet sieving)

(ISO 12956) 0.08 mm

Number of constriction in filter layer

(acc. Giroud) 25 - 40

Permeability normal to plane

(ISO 11058) 45 l/sq.m./s

CBR Puncture Strength

(ISO 12236) 3,300N

Thickness under 2kPa pressure

(ISO 9863) 3.0 mm

3.5 STORAGE INSTALLATION AND MEASUREMENT

- a.) The geotextile shall be delivered to site with an outer wrapper to protect It from exposure to the elements.
- b.) Installation of the geotextile shall be in accordance with the manufacturer's

or closer if necessary. Sounding along the bulkhead/causeway shall be made immediately before and after placing of rocks to the configuration/shape and section as indicated in the drawings. The settlement determined by using settlement rod or plate shall be considered in the computation.

2.10 CROSS-SECTIONS OF COMPLETED ROCK WORK

Cross-sections showing the elevations of the completed rockworks, and the terrain of the existing seabed prior to construction shall accompany every request for progress/final payment. Sections previously paid should be distinguished from sections being requested for payment.

2.11 ARMOURING SLOPES UNDERWHARF DECK

- a.) After driving of piles, fine grade slope area shall be protected to an even surface. Depressions shall be filled with suitable rock material to provide uniform surface after dredging work, has been completed, within 10 meters of the wharf line.
- b.) Protection of piles from damage shall be considered during the slope, armouring operations.
- c.) The Contractor shall employ controlled placing methods to secure uniform layer of specified dimension of underlayer rocks and ensure that the entire slope including the area around the piles are covered. Divers assistance shall be employed to satisfactorily complete the work.
- d.) Armour rock shall only be placed after completion of the installation of the underlayer rocks and upon acceptance by the Engineer. The Contractor shall use suitable and approved method to ensure uniform layer of specified thickness and armour protection that covers the entire slope area. Divers assistance shall be employed to complete the work.

3. GEOTEXTILE FILTER FABRIC

3.1 SCOPE OF WORK

This work covers all the following requirements regarding the installation of geotextile (filter fabric) in accordance with the lines, grades, and dimensions shown in the drawings.

3.2 GENERAL

The geotextile fabric shall meet the following requirements in full. If required, a sample of 1.0 sq.m. shall be supplied to the Engineer for approval and retention for purposes of comparative testing against materials randomly sampled from the site.

3.3 PHYSICAL PROPERTIES

- a.) The geotextile fabric shall be made of non-woven type and comprising of 100 polypropylene continuous filaments. The geotextile shall manufactured from two (2) component geotextile layers with different diameter size fibers needle punched together to form a homogeneous sheet.
- b.) The design of the component layers shall be such that one layer shall exhibit proven constriction characteristics and one layer ensures construction survivability.

typical rock shall be at least 25% of the size of the largest rock accepted/allowed for use in the works.

2.5 QUARRY SITE AND ROCK QUANTITY

- a.) Necessary survey/investigation of quarry sites applicable to the Works shall be the responsibility of the Contractor. Quality and quantity of rocks as called for in the Contract shall be the priority consideration in the selection of quarry site.
- b.) The Contractor shall submit his investigation data and test results on rock samples for the approval of the Engineer.
- c.) The Contractor, when he so intends to operate a quarry, shall be responsible for the operation including, but not limited, to obtaining all necessary permits, compliance to all regulations, payment, of royalties or the like (if any), provision and maintenance of safety measures and temporary access roads and jetty for the transportation of quarried materials.
- d.) The Engineer reserves the right to suspend any operation in connection with the natural rock and borrow pit, when in his opinion such quarried rock do not comply with the Specifications called for in the Contract. In such case, the Contractor shall comply with the Engineer's instruction.

2.6 STORAGE OF MATERIALS

Rock materials shall be stored by class, in a manner approved by the Engineer in a yard kept clean and free from undesirable materials.

2.7 SAMPLING TEST

- a.) Prior to commencement of rock works, samples of rock material with the test results conforming to the Specifications called for in the Contract shall be submitted to the Engineer for approval.
- b.) Sample rocks from different sources and of different class shall also be submitted with test results and certificates each for the Engineer's approval
- c.) Rocks accepted at the quarries before shipments or at the site before placement shall not be construed as a waiver of the right of the Engineer to reject any rock which does not meet the requirement of the Specifications.
- d.) Sample/s of each class of the approved materials are to be kept in the field for comparison/checking of delivered materials.

2.8 PLACING OF ROCKS

- a.) The rocks shall be placed in accordance with the typical, sections and elevations shown in the drawings. The methods of placing of rocks to be followed shall be based on sound engineering practice and as noted in the drawings, unless otherwise directed by the Engineer.
- b.) Mound core materials shall be placed in a manner that will prevent segregation of rock sizes, and shall be dumped as uniformly as possible using appropriate equipment or other suitable means as approved by the Engineer.

2.9 MEASURING ROCKS FOR PAYMENT

The quantity of rocks actually furnished and placed shall be determined by using the measured actual cross-sections of the bulkhead/rock causeway at 20 meters interval

- e. Piles (timber/concrete) for demolition/extraction shall be done with care and/or to the required level indicated in the plan as shown in the drawings.
- f. Rocks removed from existing slope protection shall be stored for re-use in new construction.
- g. Demolish buildings, pavements, curbs, fences, utilities., services, navigation aids and the like as determined in the field for each project and as shown on the drawings or as directed by the Engineer.

1.5 SAFETY

During the course of survey and clearing, any obstacles which are recognized and seemed to be explosive or hazardous to workers shall be removed from the site by the proper Authority.

At the end of each day's work, the Contractor shall keep the workplace in safe condition, so that no part is in danger of falling or creating hazard to personnel or equipment.

2. ROCKWORKS

2.1 GENERAL

The work includes the furnishing of all labor, materials and equipment required for the rock works including slope protection armour, underlayer, rock fill, riprap, scour rock protection, filters sand mattresses., and filter fabric in accordance with these Specifications and as indicated in the drawings or as directed by the Engineer.

Rock to be used shall be fissure-free and shall not disintegrate in sea water. Specific gravities shall not be less than 2.65.

2.2 WORK PROGRAM

The Contractor, before the commencement of Work shall submit for the Engineer's approval his proposed methodology in; placing of core, under layer and armour materials and the detailed plan for the transport of the rock materials including the location plan of the quarry site.

Supply and placing of rock materials called for in the Contract shall be the entire responsibility of the Contractor.

2.3 SURVEY AND SETTING OUT OF WORKS

Prior to commencement of the Works, the Contractor together with the Engineer shall conduct topographic survey and sounding of sea bed to determine actual field conditions. These surveys shall form the basis of quantity measurement.

The Contractor shall set out the Works arid shall be solely responsible for the accuracy of such setting out. Visible construction markers to clearly define horizontal limits of the Works shall be established by the Contractor prior to placing of any material.

2.4 SHAPE OF ROCK

The shape of rocks to be used shall generally be angular. Smooth, rounded rocks shall not be accepted/allowed to be incorporated in the works. The smallest size of a

Section VII. Bid Proposal Form
and
Bill of Quantities

Section VIII. Bidding Forms

Section IX. Plans and Drawings