PHILIPPINE BIDDING DOCUMENTS

Procurement of Wave Flume for the Coastal Engineer Research Center (COASTER) Project 4

(Project Title)

PhP32,574,065.00

(Approved Budget for the Contract)

Sixth Edition
July 2020

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

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

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

a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or note in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract.

For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

Table of Contents

Glossary of Acronyms, Terms, and Abbreviations

ABC – Approved Budget for the Contract.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

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

CDA - Cooperative Development Authority.

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

CIF – Cost Insurance and Freight.

CIP – Carriage and Insurance Paid.

CPI – Consumer Price Index.

DDP – Refers to the quoted price of the Goods, which means "delivered duty paid."

DTI – Department of Trade and Industry.

EXW – Ex works.

FCA – "Free Carrier" shipping point.

FOB – "Free on Board" shipping point.

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

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

GPPB – Government Procurement Policy Board.

INCOTERMS – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national

buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

Supplier – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

UN – United Nations.

MARIANO MARCOS STATE UNIVERSITY

Section I. Invitation to Bid

2021-038

INVITATION TO BID FOR THE PROCUREMENT OF WAVE FLUME FOR THE COASTAL ENGINEER RESEARCH CENTER (COASTER) PROJECT 4

1. The **MARIANO MARCOS STATE UNIVERSITY**, through the Special Purpose Fund of 2022, intends to apply the sum of **Thirty-Two Million Five Hundred Seventy-Four Thousand Sixty-Five Pesos only (PhP32,574,065.00),** being the Approved Budget for the Contract (ABC), to payments under the contract of the above project. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The **MARIANO MARCOS STATE UNIVERSITY** now invites bids for the above project. Delivery of the Goods is required within **365 calendar days** from receipt of Notice to Proceed. Bidders should have completed, within two (2) years from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in section II (Instruction to Bidders).

3. Bidding will be conducted through open competitive bidding procedures, using a non-discretionary "pass/fail" criterion as specified in the 2016 Revised Implementing Rules and Regulations (IRR) of Republic Act (RA) 9184, otherwise known as the "Government Procurement Reform Act,".

   Bidding is open to all interested bidders, whether local or foreign, subject to the conditions for eligibility provided in the 2016 revised IRR of RA No. 9184.

4. Prospective bidders may obtain further information from **MARIANO MARCOS STATE UNIVERSITY** and inspect the Bid Documents at the address below, during regular office hours.

5. A complete set of bid documents may be acquired by interested Bidders on **October 26, 2021** from the given address and website below upon payment of the corresponding fee in the amount of **Twenty-Five Thousand Pesos (P25,000.00).**

6. The MMSU shall allow the bidder to present its proof of payment for the fees in person and electronic means.

7. The **MARIANO MARCOS STATE UNIVERSITY** will hold a Pre-Bid Conference on **November 2**, **2021** at 2:00 PM at the Conference Room, FEM Hall Extension Building, MMSU, City of Batac and/or through video conferencing or webcasting via Google Meet (meet.google.com/zbh-zrow-mwg) which will be open to prospective bidders.

8. Bids must be duly received by the BAC Secretariat thru a) manual submission at the office address indicated below, b) online or electronic submission as indicated below, or both on or before **November 16, 2021 at 2:00 PM**. Late bids shall not be accepted.

9. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.

10. Bid opening shall be on **November 16, 2021; 2:00 PM** at the given address below and/or via e-mail algabriel@mmsu.edu.ph. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

11. **The MARIANO MARCOS STATE UNIVERSITY *reserves* the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.**

12. For further information, please refer to:

Ms. AGNES L GABRIEL
Chief, BAC Secretariat
Mariano Marcos State University
City of Batac, Ilocos Norte
Email: algabriel@mmsu.edu.ph

13. You may visit the following websites:

For downloading of Bidding Documents:
https://notices.philgeps.gov.ph
https://bac-admin.mmsu.edu.ph/bids

October 25, 2021

NATHANIEL R. ALIBUYOG
BAC CHAIR

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

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

1. Scope of Bid

The Procuring Entity, Mariano Marcos State University wishes to receive bids for the **Procurement of Wave Flume for the Coastal Engineer Research Center (COASTER) Project 4 with** Identification Number ITB2021-038, the details of which are described in Section VII (Technical Specifications).

2. Funding Information

2.1. The GOP through the Special Purpose Fund of 2021 as indicated below for *2021* in the amount of *P32,574,065.00.*

2.2. The source of funding is: Special Purpose Fund of 2021

3. Bidding Requirements

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

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

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or

through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. Foreign ownership exceeding those allowed under the rules may participate pursuant to:

i. When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;

ii. Citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines;

iii. When the Goods sought to be procured are not available from local suppliers; or

iv. When there is a need to prevent situations that defeat competition or restrain trade.

5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:

a. For procurement where the Procuring Entity has determined, after the conduct of market research, that imposition of either (a) or (b) will likely result to failure of bidding or monopoly that will defeat the purpose of public bidding: the Bidder should comply with the following requirements:

i. Completed at least two (2) similar contracts, the aggregate amount of which should be equivalent to at least *fifty percent (50%) in the case of non-expendable supplies and services or twenty-five percent (25%) in the case of expendable supplies*] of the ABC for this Project; and

ii. The largest of these similar contracts must be equivalent to at least half of the percentage of the ABC as required above.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under **ITB** Clause 18.

7. Subcontracts

The Procuring Entity has prescribed that:

a. Subcontracting is allowed. The portions of Project and the maximum percentage allowed to be subcontracted are indicated in the **BDS**, which shall not exceed twenty percent (20%) of the contracted Goods.

7.1. The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

7.2. The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

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

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time through videoconferencing/webcasting and face-to-face at its physical address MMSU, Brgy. Quiling Sur, City of Batac, Ilocos Norte as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within *2 years* prior to the deadline for the submission and receipt of bids.

10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

11. Documents comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.4. For Foreign-funded Procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

a. For Goods offered from within the Procuring Entity's country:

i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);

ii. The cost of all customs duties and sales and other taxes already paid or payable;

iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and

iv. The price of other (incidental) services, if any, listed in e.

b. For Goods offered from abroad:

i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications).**

13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2. Payment of the contract price shall be made in:

a. Philippine Pesos.

14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration[1] or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2. The Bid and bid security shall be valid for 120 days from the opening of bids. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each Bidder shall submit two copies of the first and second components of its Bid.

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

If the Procuring Entity allows the submission of bids through online submission or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which

[1] In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

16. Deadline for Submission of Bids

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

17. Opening and Preliminary Examination of Bids

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

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

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

18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

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

19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shall be submitted for each lot or item separately.

19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

19.4 [Select one, delete the other/s]

Option 1 – One Project having several items that shall be awarded as one contract.

19.4. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

20. Post-Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Notes on the Bid Data Sheet

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

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

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

a. Information that specifies and complements provisions of the ITB must be incorporated.

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

Bid Data Sheet

ITB Clause	
5.3	For this purpose, contracts similar to the Project shall be: a. *Supply and installation of Wave flume* b. completed within 2 years prior to the deadline for the submission and receipt of bids.
7.1	*Specialty works and delivery works.*
12	The price of the Goods shall be quoted DDP, MMSU, City of Batac or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts: a. The amount of not less than *two percent (2%) of ABC],* if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or b. The amount of not less than *five percent (5%) of ABC]* if bid security is in Surety Bond.
19.3	*To be awarded as 1 lot*
20.2	*No instruction*
21.2	*No instruction*

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

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

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

Any complementary information, which may be needed, shall be introduced only through the Special Conditions of Contract.

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract** (**SCC).**

2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project *{[Include if Framework Agreement will be used:]* or Framework Agreement*}* specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC**, **Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

5. Warranty

5.1 In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

5.2 The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Section V. Special Conditions of Contract

Notes on the Special Conditions of Contract

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

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

a. Information that complements provisions of the GCC must be incorporated.

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

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

Special Conditions of Contract

GCC Clause	
	Delivery and Documents – For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows: *For Goods supplied from abroad,* "The delivery terms applicable to the Contract are DDP delivered, MMSU, City of batac. In accordance with INCOTERMS." *For Goods supplied from within the Philippines,* "The delivery terms applicable to this Contract are delivered, *MMSU, City of Batac.* Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination." Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements). For purposes of this Clause the Procuring Entity's Representative at the Project Site is *the Inspection Team and the End-user.* **Incidental Services –** The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: *Select appropriate requirements and delete the rest.* a. performance or supervision of on-site assembly and/or start-up of the supplied Goods; b. furnishing of tools required for assembly and/or maintenance of the supplied Goods; c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
	e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods. f. *[Specify additional incidental service requirements, as needed.]*

	The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services. **Spare Parts –** The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier: *Select appropriate requirements and delete the rest.* 1. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and 2. in the event of termination of production of the spare parts: i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested. The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the costs thereof are included in the contract price. The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of [*indicate here the time period specified. If not used indicate a time period of three times the warranty period*]. Spare parts or components shall be supplied as promptly as possible, but in any case, within [*insert appropriate time period*] months of placing the order.
	Packaging – The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

	The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity. The outer packaging must be clearly marked on at least four (4) sides as follows: Name of the Procuring Entity Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications
	A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging. **Transportation –** Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.
	Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure. **Intellectual Property Rights –**

	The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.
2.2	*[If partial payment is allowed, state]* "The terms of payment shall be as follows: _____."
4	The inspections and tests that will be conducted are: *[Indicate the applicable inspections and tests]*

Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Item Number	QTY	UNIT	Description	Unit price	Total	Delivered, Weeks/Months
1	1	LOT	**Wave flume** shall be equipped with 2D wave flume, 2D wave maker, 2D current generator, and computer system for wave testing with the following specifications: Tank conditions: Dimensions: 35 m length, 0.5 m width, 0.8 m depth (inside of wave flume) Material: Stainless steel (inside of wave flume), mild steel (others) Observation window: 29 m with glass window), span between columns of windows shall be 1 meter Rails for carriagess: 31 m length Measuring carriages: Type: Manual operation. Manual brake shall be attached to stop carriage Quantity: 2 sets			365 days

			<u>Wave Absorber:</u> Type: stainless frame type (Absorber material: pastic) Size: 1.5 m x 0.5 m x 0.8 m (L/W/H) opposite side of wave maker: 1 set 1.0 m x 0.5 m x 0.8 m (L/W/H) (Behind wave maker: 1 set Wave Maker shall be consisting of wave boards, drive assemblies, and electrical panels, is to generate various waves in the wave flume by mechanical displacement of wave board. Tank conditions: Dimensions: 35 m x 0.5 m 0.8 m (L/W/H) (Inside of wave flume) Water depth : 0.5 m Wave performance: Wave profile: regular, random, and solitary waves Wave height: Max 0.2 m at wave period of 2.0 sec (regular waves) Wave period: 0.5 - 4.0 sec Wave board: Piston type Control: Absorption/Position control			

			<u>Wave Maker:</u> (1) Wave board Tyoe of wave board: Piston type Material: Stainless steel Supporting: Linear guide rail Width: 0.5 m Height: 0.8 m Quantity: 1 set (2) Drive assembly Type: AC motor and ball screw Quantity: 1 set (3) Wave gauge for absorption Tyoe: Capacitance type Quantity: 1 set (4) Electrical Panel Type: Control panel is self supporting type, mounted on the floor. Operation panel is desktop type Power supply: AC 220 V 3 phase Quantity: 1 set (1 control panel and 1 operation panel) Mounted parts: Servo-controller for the motors, and wave processor Function: Data communication, signal synthesis and wave maker control Data communication: Parameters to determine target waves are transmitted from the computer system mentioned below, through RS 232 C interface			

			Signal synthesis: Time history reference signals for the wave board (i.e., servo controller) are calculated continuously from the parameters transmitted by the host system mentioned below. Wave maker control: Absorption and position control can be done, based on such signals as wave board displacement, and velocity. <u>Current Generator:</u> 1) the current generator, consisting of pump unit, electro magnetic flow meter, piping and control system, is to generate current in the wave flume. Current flows bi-directionally in the wave flume 2) Control system, consisting of electrical panels controls pump units. Flow speed in the piping is set by the volume on the operation or the computer system, and is measured with the flow meter. <u>Design Conditions:</u> 1) Performance Current speed: 6 m^3/min in the piping control: pump speed control Water: Clear water			

			<u>Current Generator</u> 1) Pump unit Maximum flow quantity: 6 m^3/min Type: Axial flow type Size: 300 A Quantity: 1 set 2) Electro magnetic flow meter Size: 200 A Quantity: 1 set 3) Piping Size: 250 A Material: PVC quantity: 1 set 4) Electrical panel Type: Control panel is self-supporting type, mounted on the floor (same panel was wave maker) Power supply: AC 220 3 phase Quantity: 1 set (1 control panel and 1 operation panel) Mounted parts: inverters, control circuits Function: Current generator control, manual setting of flow speed (constant speed), external flow speed command input			
			<u>Computer System: Hardwater and system software</u> 1) Computer Type: PC-AT compatible computer Processor: Intel Core i7 or equivalent Memory: 16GB Disk storage: at least 500 GB SSD Display: 17" LCD OS: Microsoft Windows 10 Language: Visual C, Visual Fortran 2) A/D converter for data acquisition Channels: 32 ch.			

			Resolution: 16 bit Sampling : Max 1,000 Hz			
			Application Programs for PC Wave Generation Programs- The programs are to generate desired waves in the flume, by breaking down the specified wave spectrum into sine-wave components and transmitting them to the wave synthesis system for wave maker. 1) Regular wave generation program - 2D regular wave 2) Irregular wave generation program Three types of frequency spectrum are provided for irregular wave generation: - Bretschneider - Mitsuyasu spectrum - JONSWAP spectrum - User specified spectrum The spectrum is defined by superimposing up to 100 sine wave components 3) Solitary wave generation program - 2D solitary wave			

			<u>WAVE ANALYSIS PROGRAMS</u> (1) Data acquisition programs (1a) Wave gauge calibration program Measured voltage data measured with the A/D converter are compared with reference physical values, to calculate calibration coefficients by least square method. (2b) Analog data gathering program Gathered analog data are converted to physical values with calibration coefficients (2) Statistical & spectral analysis program Such data as Hmax, Hmin, H1/3, H1/10, Hvar, T1/3, T1/10, Tvar, etc. are calculated with zero-up method. Runs analysis is also available. Such data as M0, M1, M2, M3, M4, peak of power and its frequency, etc, are calculated through spectral analysis by means of FFT (Fast Fourier Transform). (3) Incident/reflected wave analysis program Measured power spectrum is separated into incident and reflected ones. The analyzed output is same as (2). Reflection factor on models, etc. is also calculated. (4) Spectral form comparison and adjustment program In order to have a good accordance of spectral shape between target and measured ones, power spectrum is to be adjusted automatically.			

			<u>CURRENT GENERATION PROGRAMS</u> The program is to generate current in the flume, by outputting the current command to the current generator operation panel. (1) Constant and sinusoidal current generation program - Constant current - Sinusoidal current **<u>WAVE MAKER AND CURRENT GENERATOR MONITORING PROGRAM</u>** The program is to monitor the status of the wave maker and the current generator. By monitoring and recording the operating status of the equipment, this program helps to understand the situation when an abnormality occurs. (1) Wave maker monitoring items - Wave command signal - Wave board position - Water surface elevation in front of wave board - Wave maker status (Making waves or not, servo or limit error status) - Other sensor signals (Analogue signal such as wave gauge are included.) (2) Current generator monitoring items - Current command signal - Flow speed in the piping - Current generator status (Generating current or not, inverter error status) - Other sensor signals (Analogue signal such as current meter included.			

			SENSORS include: Two unit current meter: 1 channel; measurement direction: 2 axes/4 directions, measurement range: ± 25cm/s ~ 200 cm/s , Precision: ± 2% FS, Response Time: 0.05s, 0.1s, 0.5s, 1s (4 range switching), Noise: ±5mm/s Two unit Propeller Type Current Meter: 6 channels, 1-axis/2 direction, measurement range: ± 3-200cm/s, Precision: ± 3 cm/s; Sampling Capacity: 1,000,000 Two unit Automatic up & down apparatus Two unit Wave Height Meter; 4 channel, Linearity: ± 0.3% FS, Response Speed: 10Hz, Stability: 0.02%/^{o}C Include all accessories, cable support and connection			
			<u>SCOPE OF WORK</u> Design and manufacturing and shop test of the equipment Installation and acceptance testing at MMSU Training to the end user for operation and maintenance at the site **<u>ACCEPTANCE TESTING AT THE SITE</u>** The installed system will be tested at the site on: - Wave performance test - Irregular waves test - Solitary waves test - Current generation performance test All test should be within 2% margin of error based on the indicate wave performance of the flume.			

			Include all manual of operation, repair & maintenance warranty of parts and services of at least 5 years.			
2	1	**set**	**Computer Software** **Hydro-Wave-Morpho dynamics Software** Packaging and modeling of the wave analysis program which include SWAN (wave transformation, CADMAS-SURF (wave force and wave overtopping The package should include installation and one case study within the COASTER project study site. The model shall be based on freely available data Include Instruction/Training manual for the SWAN and CADMAS-SURF containing the installation of the software, theoretical framework of the model/software, method of modeling, execution and expression of output. On-site installation and briefing of the software Provide short training course on coastal engineering for at least 3-days			

Section VII. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular

standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent*." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

Technical Specifications

Item Number	QTY	UNIT	Description	Compliance of Tech. Specifications
1	1	LOT	**<u>Wave flume</u>** shall be equipped with 2D wave flume, 2D wave maker, 2D current generator, and computer system for wave testing with the following specifications: Tank conditions: Dimensions: 35 m length, 0.5 m width, 0.8 m depth (inside of wave flume) Material: Stainless steel (inside of wave flume), mild steel (others) Observation window: 29 m with glass window), span between columns of windows shall be 1 meter Rails for carriagess: 31 m length Measuring carriages: Type: Manual operation. Manual brake shall be attached to stop carriage Quantity: 2 sets	
			<u>Wave Absorber:</u> Type: stainless frame type (Absorber material: plastic) Size: 1.5 m x 0.5 m x 0.8 m (L/W/H) opposite side of wave maker: 1 set 1.0 m x 0.5 m x 0.8 m (L/W/H) (Behind wave maker: 1 set Wave Maker shall be consisting of wave boards, drive assemblies, and electrical panels, is to generate various waves in the wave flume by mechanical displacement of wave board. Tank conditions: Dimensions: 35 m x 0.5 m 0.8 m (L/W/H) (Inside of wave flume) Water depth : 0.5 m Wave performance: Wave profile: regular, random, and solitary waves Wave height: Max 0.2 m at wave period of 2.0 sec (regular waves) Wave period: 0.5 - 4.0 sec Wave board: Piston type Control: Absorption/Position control	

			<u>Wave Maker:</u> (1) Wave board Type of wave board: Piston type Material: Stainless steel Supporting: Linear guide rail Width: 0.5 m Height: 0.8 m Quantity: 1 set (2) Drive assembly Type: AC motor and ball screw Quantity: 1 set (3) Wave gauge for absorption Type: Capacitance type Quantity: 1 set (4) Electrical Panel Type: Control panel is self-supporting type, mounted on the floor. Operation panel is desktop type Power supply: AC 220 V 3 phase Quantity: 1 set (1 control panel and 1 operation panel) Mounted parts: Servo-controller for the motors, and wave processor Function: Data communication, signal synthesis and wave maker control Data communication: Parameters to determine target waves are transmitted from the computer system mentioned below, through RS 232 C interface	

			Signal synthesis: Time history reference signals for the wave board (i.e., servo controller) are calculated continuously from the parameters transmitted by the host system mentioned below. Wave maker control: Absorption and position control can be done, based on such signals as wave board displacement, and velocity. <u>Current Generator:</u> 1) the current generator, consisting of pump unit, electromagnetic flow meter, piping and control system, is to generate current in the wave flume. Current flows bi-directionally in the wave flume 2) Control system, consisting of electrical panels controls pump units. Flow speed in the piping is set by the volume on the operation or the computer system, and is measured with the flow meter. <u>Design Conditions:</u> 1) Performance Current speed: 6 m^3/min in the piping control: pump speed control Water: Clear water	

			<u>Current Generator</u> 1) Pump unit Maximum flow quantity: 6 m^3/min Type: Axial flow type Size: 300 A Quantity: 1 set 2) Electromagnetic flow meter Size: 200 A Quantity: 1 set 3) Piping Size: 250 A Material: PVC quantity: 1 set 4) Electrical panel Type: Control panel is self-supporting type, mounted on the floor (same panel was wave maker) Power supply: AC 220 3 phase Quantity: 1 set (1 control panel and 1 operation panel) Mounted parts: inverters, control circuits Function: Current generator control, manual setting of flow speed (constant speed), external flow speed command input	
			<u>Computer System: Hardwater and system software</u> 1) Computer Type: PC-AT compatible computer Processor: Intel Core i7 or equivalent Memory: 16GB Disk storage: at least 500 GB SSD Display: 17" LCD OS: Microsoft Windows 10 Language: Visual C, Visual Fortran 2) A/D converter for data acquisition Channels: 32 ch. Resolution: 16 bit Sampling : Max 1,000 Hz	

			Application Programs for PC Wave Generation Programs- The programs are to generate desired waves in the flume, by breaking down the specified wave spectrum into sine-wave components and transmitting them to the wave synthesis system for wave maker. 1) Regular wave generation program - 2D regular wave 2) Irregular wave generation program Three types of frequency spectrum are provided for irregular wave generation: - Bretschneider - Mitsuyasu spectrum - JONSWAP spectrum - User specified spectrum The spectrum is defined by superimposing up to 100 sine wave components 3) Solitary wave generation program - 2D solitary wave	
			<u>WAVE ANALYSIS PROGRAMS</u> (1) Data acquisition programs (1a) Wave gauge calibration program Measured voltage data measured with the A/D converter are compared with reference physical values, to calculate calibration coefficients by least square method. (2b) Analog data gathering program Gathered analog data are converted to physical values with calibration coefficients (2) Statistical & spectral analysis program Such data as Hmax, Hmin, H1/3, H1/10, Hvar, T1/3, T1/10, Tvar, etc. are calculated with zero-up method. Runs analysis is also available. Such data as M0, M1, M2, M3, M4, peak of power and its frequency, etc, are calculated through spectral analysis by means of FFT (Fast Fourier Transform). (3) Incident/reflected wave analysis program Measured power spectrum is separated into incident and reflected ones. The analyzed output is same as (2). Reflection factor on models, etc. is also calculated. (4) Spectral form comparison and adjustment program In order to have a good accordance of spectral shape between target and measured ones, power spectrum is to be adjusted automatically.	

			<u>CURRENT GENERATION PROGRAMS</u> The program is to generate current in the flume, by outputting the current command to the current generator operation panel. (1) Constant and sinusoidal current generation program - Constant current - Sinusoidal current **<u>WAVE MAKER AND CURRENT GENERATOR MONITORING PROGRAM</u>** The program is to monitor the status of the wave maker and the current generator. By monitoring and recording the operating status of the equipment, this program helps to understand the situation when an abnormality occurs. (1) Wave maker monitoring items - Wave command signal - Wave board position - Water surface elevation in front of wave board - Wave maker status (Making waves or not, servo or limit error status) - Other sensor signals (Analogue signal such as wave gauge are included.) (2) Current generator monitoring items - Current command signal - Flow speed in the piping - Current generator status (Generating current or not, inverter error status) - Other sensor signals (Analogue signal such as current meter included.	
			SENSORS include: Two unit current meter: 1 channel; measurement direction: 2 axes/4 directions, measurement range: ± 25cm/s ~ 200 cm/s , Precision: ± 2% FS, Response Time: 0.05s, 0.1s, 0.5s, 1s (4 range switching), Noise: ±5mm/s Two unit Propeller Type Current Meter: 6 channels, 1-axis/2 direction, measurement range: ± 3-200cm/s, Precision: ± 3 cm/s; Sampling Capacity: 1,000,000 Two unit Automatic up & down apparatus Two unit Wave Height Meter; 4 channel, Linearity: ± 0.3% FS, Response Speed: 10Hz, Stability: 0.02%/^{o}C Include all accessories, cable support and connection	

			SCOPE OF WORK Design and manufacturing and shop test of the equipment Installation and acceptance testing at MMSU Training to the enduser for operation and maintenance at the site **ACCEPTANCE TESTING AT THE SITE** The installed system will be tested at the site on: - Wave performance test - Irregular waves test - Solitary waves test - Current generation performance test All test should be within 2% margin of error based on the indicate wave performance of the flume. Include all manual of operation, repair & maintenance warranty of parts and services of at least 5 years.	
2	1	**set**	**Computer Software** **Hydro-Wave-Morpho dynamics Software** Packaging and modeling of the wave analysis program which include SWAN (wave transformation, CADMAS-SURF (wave force and wave overtopping The package should include installation and one case study within the COASTER project study site. The model shall be based on freely available data Include Instruction/Training manual for the SWAN and CADMAS-SURF containing the installation of the software, theoretical framework of the model/software, method of modeling, execution and expression of output. On-site installation and briefing of the software Provide short training course on coastal engineering for at least 3-days	

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);
or

☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document,
and

☐ (c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;
and

☐ (d) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

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

☐ (f) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; **and**

☐ (g) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration; **and**

☐ (h) Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**

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

Financial Documents

☐ (j) The Supplier's audited financial statements, showing, among others, the Supplier's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**

☐ (k) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC);

or
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

Class "B" Documents

☐ (l) If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence;
or
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (m) Original of duly signed and accomplished Financial Bid Form; **and**

☐ (n) Original of duly signed and accomplished Price Schedule(s).

Other documentary requirements under RA No. 9184 (as applicable)

☐ (o) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.

☐ (p) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.


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