

# **TERMS OF REFERENCE FOR THE**



**CONSULTANCY SERVICE FOR THE PREPARATION  
OF DETAILED ENGINEERING DESIGN AND  
CONSTRUCTION SUPERVISION FOR THE  
CONSTRUCTION OF NEW MOUNT STA RITA  
BRIDGE AND NEW 1859 PWC BRIDGE**

**CONSULTANCY SERVICE FOR THE PREPARATION OF DETAILED ENGINEERING DESIGN  
AND CONSTRUCTION SUPERVISION FOR THE CONSTRUCTION OF  
NEW MOUNT STA RITA BRIDGE AND NEW 1859 PWC BRIDGE**

**1. BACKGROUND AND PROJECT DESCRIPTION**

Studies conducted by the Consultants commissioned by SBMA to check the structural integrity of the existing **Sta Rita Bridge & 1859 PWC Bridge** such as, Angel Lazaro and Associates (2000), A.C. Ong Consulting, Inc. (2019) in relation to the as-built bridge and the as-built plan prepared and constructed during the U.S. Navy period (1961) showed that the said facility has accumulated defects due to old age and exposures to different stresses/elements.

In order to retain the full functionality and adopt to new environmental trends and requirements of the facility to handle future operations as part of the SBMA mandates in expanding its core business, the hiring of a Consultant to undertake the **detailed engineering design and construction supervision of new Mount Sta Rita Bridge and new 1859 PWC Bridge** is necessary.

This Terms of Reference (TOR) pertains to the procurement of consulting services for the preparation of detailed engineering plans, analysis and design computations, unit cost analyses/estimates, bidding documents preparation, bidding assistance and construction supervision for the below identified proposed project in accordance with prevailing design standards and professional practices as well as the generally accepted principles of architectural and engineering designs for roadways/highways, traffic/transport, and constructions.

The documents sought in this TOR shall be prepared by the Consultant in accordance with the latest Revised Implementing Rules and Regulations (IRR) of Republic Act 9184 (RA 9184), otherwise known as the Government Procurement Reform Act (GPRA):

**Consultancy Service for the Preparation of Detailed Engineering Design and Construction Supervision for the Construction of New Mount Sta Rita Bridge and New 1859 PWC Bridge**

The Subic Bay Metropolitan Authority (SBMA) intends to bid out to the prospective consulting firms ("Consultant") the delivery of the consulting services for the aforementioned project

**LOCATION:** The vicinities and limits of the proposed project is within the bounds of the Subic Bay Freeport Zone (SBFZ) as provided in the location plan attached hereto and made integral part of this TOR (ANNEX A).

## **2. CAVEAT**

The information in this TOR is given to assist prospective firms engaged in the consultancy services in the preparation of their proposal and / or serve as a guide in the performance of the required services if awarded the contract. SBMA does not guarantee the accuracy and completeness of the information contained herein or its various attachments. In all cases, interested parties shall conduct and exert their own diligence, investigations, and projections for the proposed project:

- None of the information herein will be used by the recipient or any of its employees or representatives in any manner whatsoever, in whole or in part, other than in connection with its evaluation of works for the purposes of considering the provisions of services proposed herein.
- Without limiting the generality of the foregoing, the recipient will not reproduce this TOR to any person other than a limited number of the recipient employees or representatives who have a clear need to know such information; and
- Any proposed action by the recipient which is inconsistent in any way with the foregoing agreements will require written consent from SBMA.

While SBMA is open to all applications from qualified parties, SBMA reserve the right to reject any bids, declare a failure of bidding, or not award the contract in accordance with IRR-A Section 41 reservations clause of RA 9184.

## **3. OBJECTIVE**

The desired consulting firm should be able to prepare and deliver the succeeding required services for the two bridges mentioned:

- Detailed engineering plans and estimates
- Assist in the bidding process, and
- Supervise the constructions

## **4. SCOPE OF CONSULTING SERVICES**

The following scope of services are recommended to achieve the objective:

### **4.1. DESIGN PHASE**

#### **4.1.1. PRE-DESIGN STAGE**

**4.1.1.1. Site Inspection / Field Reconnaissance.** – Initial site inspection for purposes of siting and orienting for the proposed new bridge at the project site shall be jointly conducted by the Consultant and

the SBMA representatives to evaluate and consider, but not limiting to the following:

- Design the replacement of the existing Concrete Bridge using the Load and Resistant Factor Design (LRFD) approach, HL93 Loading.
- Bridge Geohazard consideration due to timber blockage during typhoon
- With rerouting scheme during construction
- Appropriate design incorporating water sources
- Improvement of line and grade and data gathering of existing bridge and road vertical grade.
- Hydrology and Hydraulic preliminary assessment.
- Assessment and mitigation of erosion, scour problems and siltation.
- Coordination with other SBMA stakeholders such as concerned SBMA departments/offices, locators, residents (such as the Tourism Department, Aeta Community Leaders, Subic Water etc.).
- Site development considerations such as lightings, signages and others
- Utility relocations
- Outpost for New Sta. Rita Bridge

Site pictures are to be taken by the Consultant and electronically stored for later reference as file pictures for every 20 meters of upstream and downstream riverbeds, and bridge approaches to a minimum considerable length as determined necessary by the consultants and approved by SBMA.

All subsequent site inspections may be conducted solely by the Consultant except in cases where clarifications are to be made through the SBMA representatives.

- 4.1.1.2. Surveying and benchmarking.** – Topographic/Hydrographic Surveys at the project site shall be conducted by the Consultant with reference to the requirements of the DPWH Bridge Design Vol. 5. (or the latest guidelines issued by this department) Consultant will proceed with the survey works jointly with the SBMA representatives. All benchmarks shall be determined and set at conspicuous places near and outside the limits of the

project site. Said benchmarks shall be adequately marked and should be free from obstructions and tampering.

Service utility and structures surveys shall likewise be conducted by the Consultant jointly with SBMA representatives to determine the location and alignment of all service utilities. Also, As-built of existing structures shall be conducted by the Consultant. Thereafter, any service utility and structures found to be possibly adversely affected by the project shall be noted and the concerned service utility provider and SBMA representatives shall be immediately informed.

All survey data shall be properly logged, recorded and preserved by the Consultant in electronic and hard copies.

**4.1.1.3. Gathering of data, collation, and their use.** – The gathering and collation of all the necessary data to undertake the consulting service shall be the sole responsibility of the Consultant and must conduct soil boring, soil tests, all data relative to soil foundation characteristics and capacity, construction materials investigation and other data required for the preparation of detailed engineering design.

The SBMA, as the end-user, shall be furnished copies of the data gathered and collated by the Consultant for the former's own record and future use. Such data shall be integral to the whole package of deliverables.

All the aforementioned data shall be stored electronically and in hard copies, with the electronic copies saved in two (2) Universal Serial Bus (USB) Drivers while the ten (10) hard copies are in printed forms using A4 bond papers. The same shall be submitted to the SBMA as part of the deliverables.

The Consultant shall retain its own copies of the gathered and collated data in both the aforementioned types of media and shall insure that copies can be made in the event the SBMA requests said copies for other reasons.

The SBMA authorized representatives may inquire into the source and purpose of each data in relation to the proposed project.

**4.1.1.4. Preparation of final conceptual plan, budgetary cost estimates and proposed construction schedule.** - Before the Consultant commences the preparation of the final conceptual plan, budgetary cost estimates and proposed construction schedule, planning conferences shall be conducted by and between the Consultant and the SBMA representatives to discuss relevant data with respect to the project as well as the proposals of the Consultant as shown in the conceptual plan prepared by the latter. Any other important data and detail which have not been considered shall be determined by any of the parties and shall be subsequently gathered, collated, and stored by the Consultant, subject to the requirements set forth in Section c above.

The Consultant shall prepare the final conceptual plan, budgetary cost estimates and for the proposed project in accordance with the durations set in the timelines as provided in this TOR.

All the aforementioned data shall be stored in electronic copies (e-file) stored in a working two (2) USB Drivers while the ten (10) hard copies are in printed forms using A4 and A3 for conceptual plans.

For the purposes of this Section, the conceptual plan and budgetary cost estimates shall be considered final only when approved by the SBMA Chairman and Administrator. No additional cost for payment to the Consultant shall accrue during the period within which the approval of the Chairman and Administrator on the aforesaid documents is sought. Further, when SBMA deems that the submitted conceptual plan and budgetary cost estimates be reworked to comply with important considerations which were earlier overlooked, the same shall be complied with by the Consultant without additional cost to the SBMA.

The Consultant may recommend on the further improvement or simplification of the conceptual plan, subject to the above-stated restrictions.

## 4.1.2. FINAL DESIGN STAGE

### 4.1.2.1. PREPARATION AND COMPLETION OF PLANS

The consultant should be able to prepare bidding documents for the two bridges for the procurement of infrastructure project and should be designed having the parameters as outlined in the Conceptual Plan and Budgetary Requirements incorporating the following but not limited to items listed in Section 4.1.1.1:

- Submit complete Plans and Detail, Specification and UCA for the construction of New 36 Ton Capacity Mount Sta Rita Bridge and New 36 Ton 1859 PWC Bridges .

**4.1.2.1.1. Project Timelines.** – The Consultant shall observe and meet the durations set in the project timelines for the preparation and delivery of the plans as provided in this TOR.

However, the plans shall be considered as final when approved by the Chairman and Administrator.

In the event it is required that the same be reworked to comply with important considerations, any additional time beyond the target day of completion shall be at no additional cost to SBMA, until the same is approved as final plans by the Chairman and Administrator.

**4.1.2.1.2. Blank plan template.** – The SBMA Engineering Department shall provide the blank plan template from which the Consultant shall pattern his plans.

**4.1.2.1.3. Availability of the construction materials and other accessories.** – The Consultant shall ensure that all the construction materials and accessories to be incorporated in the proposed project are available in the nearest local market to avoid possible incurrence of freight charges and the likelihood of future variation orders during project implementation.

**4.1.2.1.4. Affected Utilities.** – The Consultant shall include in the plans the location and alignment of all utilities that may be adversely affected by the project under consideration, and indicate therein the recommended disposition and/or relocation as agreed in the planning conferences to be conducted during the execution of this contract. The consultant shall prepare a relocation and/or reinstatement plan including corresponding costs estimates for the said relocation/reinstatement.

**4.1.2.1.5. Review of the plans.** – Upon substantial completion of the plans and prior to its final acceptance, the Consultant shall furnish the SBMA of electronic copies (e-file) stored in a working two (2) USB Drive and ten (10) hard copies thereof printed in A3 size bond papers for plans and in the standard format as provided in the template under Section 4.1.2.1.2 hereof for review by the SBMA Engineering Department.

All pertinent engineering/architectural considerations as well as engineering analysis, design computations and specifications shall be attached to the plans, signed and sealed by the respective design professionals at the cover page and indicating therein as well their respective Professional Regulation Commission (PRC) License Number, Professional Tax Receipt (PTR) Number and Tax Identification Number (TIN) details. All subsequent pages including the attachments required below shall be initialed accordingly by the design professional concerned.

In case the engineering analysis and design computations were based on computer generated outputs using specialized computer software, all such outputs shall likewise be attached and the names and relevant information about the computer software used in the generation of the outputs, analysis and design, such as, but not limited to, the name, version, and application, shall be clearly indicated in the corresponding documents.



All comments and recommendations from the Engineering Department shall be promptly transmitted to the Consultant or its Point of Contact (POC) for consideration and inclusion in the plans, unless the Consultant offers alternatives, which the Engineering Department may reconsider.

Any additional time on the duration of the contract due to the review of the plans by the SBMA Engineering Department shall be at no cost to SBMA.

**4.1.2.1.6. Delivery of the plans.** – Upon finalization of the detailed roadway, landscaping and engineering plans as approved by the Chairman and Administrator, the Consultant shall furnish the Engineering Department the complete sets of copies thereof as provided in Section 4.1.2.1.2 above, with the hard copies printed in size A3 bond papers signed and dated by the Consultant in the title block of each sheet. Its respective design professionals shall, on their part, sign, date, and seal with their professional seals, as well as indicate their corresponding PRC License Number, PTR Number and TIN in the blanks corresponding to their names. The initials of the personnel who drafted the plans shall likewise be affixed.

**4.1.2.1.7. Ownership of the plans and warranty** – The SBMA shall be the owner of the delivered complete plans even as the Consultant may retain electronic and hard copies thereof. However, the latter warrants as to the correctness, accuracy and soundness of the designs in the plans.

#### **4.1.2.2. PREPARATION AND COMPLETION OF ESTIMATES**

**4.1.2.2.1. Preparation of the estimates.** – The Consultant shall prepare the estimates in the form of Unit Cost Analysis (UCA) based on the completed plans and specifications, accepted budgetary cost estimates and in accordance with the generally accepted principles in

value engineering and estimation including COVID-19 construction requirements related expenses.

**4.1.2.2.2. Coordination during the estimation process and timelines** – The Consultant shall maintain the accessibility of the POC to SBMA representatives for proper coordination during the preparation of UCA. The Consultant or its POC shall coordinate the progress of the estimation process as needed or required by the SBMA representatives to meet the durations set in this TOR.

The UCA shall be considered final only when the same is finally approved by the Chairman and Administrator and no further instructions or orders are received to amend, revise, or rework all or part of the document.

In the event it is required that the UCA be reworked to comply with important considerations, any additional time beyond the target day of completion shall be at no additional cost to SBMA, until the same is approved as final UCA by the Chairman and Administrator.

**4.1.2.2.3. Template for UCA** – The SBMA Engineering Department shall provide the template for the UCA, which shall be adopted by the Consultant in the preparation of the documents.

**4.1.2.2.4. Plan details and specifications.** – The consultant shall see to it that all the construction materials and accessories as detailed in the plans and provided technical specifications are adequately quantified and described in the UCA.

**4.1.2.2.5. Canvass of materials and prevailing prices.** – It shall be the responsibility of the Consultant to conduct canvasses of construction materials to ensure that all costs of construction materials are at par with the prevailing prices.

In determining the prevailing prices of construction materials and accessories, the Consultant shall canvass from at least three (3) nearest local suppliers.

**4.1.2.2.6. Equipment, labor, fuel and lubricants cost.** – The Consultant shall determine the prevailing cost of equipment in accordance with the latest edition of the Philippine ACEL (Association of Carriers and Equipment Lessors, Inc.) Rates or the latest issuances of the Department of Public Works and Roadways (DPWH).

The cost of labor shall be determined by the Consultant in accordance with the approved minimum rates within Region III (Central Luzon) set under the latest Wage Order issued by the National Wages and Productivity Commission (NWPC) and disseminated by the Department of Labor and Employment (DOLE).

The cost of fuel and lubricants shall be the prevailing costs as may be determined by the Consultant from canvasses of at least three (3) nearest local suppliers.

**4.1.2.2.7. Other costs (indirect, overhead, taxes, etc.)** – Other costs are those provided pursuant to the latest department issuances of the DPWH.

**4.1.2.2.8. Review of the Estimates.** – Upon substantial completion of the estimates and prior to its final acceptance, the Consultant shall furnish the SBMA of electronic copies (e-file) stored in two (2) working USB drive and ten (10) hard copies thereof printed in A4 size bond papers and in the standard format as provided in the template provided under Section 4.1.2.2.3 hereof for review by the SBMA Engineering Department.

All pertinent factors in value engineering shall be considered in the estimates and reflected therein. The same shall be signed by the respective personnel of the Consultant who prepared the same at the cover page, indicating therein their respective PRC License Number, PTR Number and TIN details in the case of the architects

and engineers involved in the preparation of the estimates. All subsequent pages including any attachments thereof shall be respectively initialed by those who signed in the cover page.

All comments and recommendations from the Engineering Department shall be promptly transmitted by the latter to the Consultant or its POC for consideration and inclusion in the estimates, unless the Consultant offers alternatives which the Engineering Department may reconsider.

Any additional time on the duration of the contract due to the review of the estimates by the SBMA Engineering Department shall be at no cost to SBMA.

**4.1.2.2.9. Delivery of the Unit Cost Analysis.** – Upon finalization of the UCA as approved by the Chairman and Administrator, the Consultant shall furnish the Engineering Department the complete sets of copies thereof as provided in Schedule of Timelines and Deliverables as shown in ANNEX 'B', with the hard copies printed in size A4 bond papers signed and dated by the Consultant in the cover page thereof. Its respective professionals involved in the preparation of the UCA shall, on their part, sign, date, and seal with their professional seals, as well as indicate their corresponding PRC License Numbers, PTR Number and TIN in the blanks corresponding to their names. The initials of the personnel who encoded the document shall likewise be affixed.

**4.1.2.2.10. Ownership of the Unit Cost Analysis and warranty** – The SBMA shall be the owner of the delivered complete UCA even as the Consultant may retain electronic and hard copies thereof. However, the latter warrants as to the correctness and accuracy of the UCA.

#### **4.1.2.3. SECURING OF PERMITS**

The Consultant shall secure all regulatory requirements with concerned government and SBMA offices and/or departments such as Demolition Permit, Free and Prior Informed Consent, Environmental and Social Permit, Tree Cutting Permit, Building Permit and others.

#### **4.1.3. DOCUMENTATION STAGE (PREPARATION OF BIDDING DOCUMENTS FOR THE PROCUREMENT OF INFRASTRUCTURE PROJECTS)**

**4.1.3.1. Bidding documents template.** – The SBMA shall furnish the Consultant a complete set of a typical bidding document package, which shall be adopted as a pattern in the preparation of the bid documents.

**4.1.3.2. Contents of the bidding documents.** – The bidding documents for the infrastructure project shall contain the following information:

- a. Invitation to Bid
- b. Instruction to Bidders (ITB)
- c. General Conditions of the Contract (GCC)
- d. Blank Forms to be used for Bidding
- e. Bill of Quantities/UCA
- f. Technical Specifications
- g. Drawings
- h. Forms of Contracts
- i. Bid Data Sheets (BDS)
- j. Special Conditions of the Contract (SCC)
- k. Forms and Other Related Bid Documents

**4.1.3.3. Review of the bidding documents.** — Upon substantial completion of the bidding documents and prior to its final acceptance, the Consultant shall furnish the SBMA of electronic copies (e-file) stored in two (2) working USB drive and ten (10) hard copies thereof printed in A4 size and A3 bond papers for plans and in the standard format as provided in the template under Section 4.1.2.1.2 and Section 4.1.2.2.3 hereof for review by the SBMA Engineering Department.

All of the above-enumerated items shall be attached and properly tabbed and/or referenced to facilitate easy review thereof. The same shall be signed by the respective personnel of the Consultant who prepared the same at the cover page, indicating therein their respective PRC License Number, PTR Number and TIN details in the case of the architects and engineers involved in the preparation of the bidding documents. All subsequent pages including any attachments thereof shall be respectively initialed by those who signed in the cover page.

All comments and recommendations from the Engineering Department shall be promptly transmitted to the Consultant or its POC for consideration and inclusion in the bidding documents, unless the Consultant offers recommendations, which the Engineering Department may reconsider.

Any additional time on the duration of the contract due to the review of the estimates by the SBMA Engineering Department shall be at no cost to SBMA.

**4.1.3.4. Bidding Assistance** – The Consultant shall provide bidding assistance to SBMA during the bidding of this project until the completion of the bidding process at no additional cost to SBMA.

The consultant shall perform the task such as but not limited to the following:

- Assistance during Pre-procurement Conference
- Assistance during Board Presentation if needed
- Answering queries of prospective contractors and preparation of Bid Bulletins
- Submit Comprehensive Report on Bidding Assistance provided

#### **4.1.4. OTHER DUTIES AND RESPONSIBILITIES OF THE CONSULTANT FOR THE PREPARATION OF DETAILED ENGINEERING DESIGN**

**4.1.4.1. Custody of all data and documents** – The Consultant shall be responsible in the custody of all data and documents for later reference and delivery to SBMA, which shall include, among others, the following:

- Survey and other relevant data/tests or information, such as applicable standards, etc.;
- Plans;
- Bill of estimates and unit cost analysis;
- Canvasses of construction materials and accessories;
- Electronic files as required to be delivered to SBMA under this TOR;
- Bidding documents; and
- Pictures relevant to the proposed projects.
- All necessary permits, clearances, demolition/building permit, regulatory requirements for environmental permits.

**4.1.4.2. Point-of-contact personnel.** – The Consultant shall provide his point-of-contact personnel (POC) who may be contacted or summoned at any reasonable time by the SBMA representatives regarding the project. Whenever it becomes necessary, it shall be its responsibility to make the POC present at any meeting called for this purpose.

**4.1.4.3. Office.** - To establish its office in any location and at its own option. In case the Consultant opts to put up a satellite office within the Subic Bay Freeport Zone (SBFZ), it shall be its responsibility to apply for all the necessary permits and clearances, and pay for all fees, when required, in connection thereto. Further, any charges from any public utility service provider due to electricity, water, and communication, etc. consumptions shall be at the expense of the Consultant.

In case the Consultant decides to perform work at the main office, it shall be its responsibility to maintain the accessibility to SBMA representatives of its POC at any reasonable time for proper coordination.

**4.1.4.4. Payment of other costs not provided under this TOR.** – All other costs not provided in this TOR such as, but not limited to lease or rental dues on the use of land, building, equipment, etc., shall be borne solely by the Consultant. Office equipment requirements are **two (2) Desktop Computers, i5, 8GB RAM, 1TB SSD and two (2) SSD, 2TB External Drive or equivalent. Reimbursable at cost & shall be turned over to SBMA Engineering Department upon completion of the contract.**

**4.1.4.5. Copyright.** – The Consultant shall be under obligation to respect SBMA’s ownership of the submitted final documents, and, under this TOR, shall be barred from claiming copyright of the said documents.

#### **4.1.5. EXPERTISE REQUIREMENTS**

The qualifications, skills, as well as general and specific professional experience requirements shall be as follows:

- Must be a duly registered consulting firm in the Philippines with specialization in consulting services for the structural analysis, design and construction supervision of bridge/roadway/landscaping planning and engineering, and estimating of horizontal structures at least two (2) bridges and ten (10) kilometers of paved road.
- The Consulting Firm or Consultant must have previously contracted consulting services for bridge and horizontal structures with the government and private entities with proven competence.
- The Consultant must have extensive experience in consulting services for the preparation of detailed engineering plans and structural design for bridges, roadway and engineering plans and estimates of bridge and roads/roadway projects for a minimum of ten (10) years.
- The Consultant must be maintaining the following staff as his employees:

##### **4.1.5.1. Key Personnel for Design Phase**

- **Project Manager/Team Leader** - Must be a registered Civil Engineer who is authorized by the Consultant to undertake the overall supervision of the consulting service. Must have wide and extensive experience in project management and design supervision for bridges of not less than ten (10) years. S/He Shall prepare the Structural Analysis and Design for the project bridge and furnish the details to be incorporated in the plans. S/He shall likewise provide the technical specifications for all the structural elements of the structures. S/He must have proven experience in the practice of his/her profession as a civil – structural engineer for not less than ten (10) years. After all



bridge plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity.

- **Geotechnical/Soils Engineer** - Must be a registered Civil Engineer who shall prepare geotechnical/foundation/soils studies and investigation for the underlying layer of the bridge structure. S/He must have proven experience as a geotechnical/foundation/soils engineer for not less than five (5) years. After all geotechnical/foundation/soils plans and investigation are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity
- **Civil Engineer** - Must be a registered Civil Engineer, who shall prepare the details of all the civil works involved in the project with wide and extensive experience in the fields of bridge, road designs and slope protection, traffic control devices, surveying and plan preparation in an urban environment and capable of preparation of standard design formats and guidelines and shall prepare analysis and design for the project and furnish the details to be incorporated in the plans. S/He shall likewise provide the technical specifications for all civil works, roads and traffic control. S/He must have proven experience as a civil/highway and road design engineer for not less than five (5) years. After all civil, roads/highway and traffic plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity. He/she must have proven experience as a civil engineer for not less than five (5) years.
- **Geodetic Engineer** - Must be a registered Geodetic Engineer, who shall be responsible for the conduct of all site surveys and furnishing of data to the concerned staff when needed. S/He must have proven experience as geodetic engineer for not less than five (5) years. After all Survey Plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity.
- **Electrical Engineer** - Must be a registered professional Electrical Engineer with extensive experience in roads & bridges and lighting system. S/He must prepare the electrical plans and must have proven experience as registered professional electrical engineer for not less than five (5) years. After all

Electrical Plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity.

- **Hydrologist** - must be a registered Civil/Hydrology Engineer who shall prepare written analyses in the conduct of measuring properties such as stream volume and flow, collecting and testing water samples, evaluating the environmental impacts of pollution and natural disasters and predicting the future effects of water-related phenomena, such as erosion and sedimentation build-up and storm drainage plans for the project. S/He must have a wide experience in hydrology assessment and proven experience as hydrology engineer for not less than five (5) years. Particular expertise is required for assessing design water levels based on joint flooding and tidal influences. After all written analyses and storm drainage plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity.
- **Material Engineer** - Must be a registered Civil Engineer with extensive experience in bridge and pavement design, material testing and quality control particularly for bridge project and must be a DPWH accredited Materials Engineer II. S/He must assist the Civil Engineer in the preparation of roads design and must have proven experience as Material Engineer for not less than five (5) years.
- **Environmental/Social Specialist** - Must be a registered Civil Engineer with extensive experience in the preparation of environmental and social assessment for highway & bridge projects and since the project is within Certificate of Ancestral Domain Title (CADT) will also submit/comply with the requirements of National Commission of Indigenous People (NCIP). S/He must have proven experience as Environmental/Social Specialist for five (5) years. After all, documents and plans are finalized for approval by SBMA, S/He shall sign and seal the same in his/her professional capacity.
- **Quantity/Cost/Specifications Engineer** - Must be a registered Civil Engineer, who shall perform materials take-off or quantity survey in accordance with the approved plans. S/He shall be responsible for the conduct of materials canvassing for the

determination of the prevailing costs. S/He shall likewise collate and prepare in final form the technical specifications to be incorporated in the bidding documents, in coordination with different aspects of engineering. Finally, S/He shall provide the Bill of Estimates and Unit Cost Analysis for the project. S/He must likewise have proven experience as quantity/ cost/ specifications engineer for not less than five (5) years.

**Note:** All plans must be signed and sealed by a duly registered professional engineer.

#### **4.1.5.2. Technical Support Staff**

- **AutoCAD Operator** - Must be knowledgeable and skillful in drafting Computer-Aided-Design (CAD) plans, and must have gained experience in drafting works using CAD for not less than one (1) year.
- **Surveying Assistant** - S/He shall provide assistance in all surveying fieldwork. As such, S/He must have gained experience in surveying fieldwork for not less than one (1) year.

#### **4.1.5.3. Administrative Support Staff**

- **Secretary/Encoder** - Must be knowledgeable and skillful in the use or application of MS Office and Excel software. S/He shall encode and print in final form all official correspondences, database, and bidding documents. S/He shall see to it that all important data are electronically stored for later reference and use by the concerned staff. Finally, S/He shall serve as the secretary of the Consultant, records and documents custodian, time keeper, and be responsible for the taking and preparation of the minutes of all meetings. S/He must have likewise gained combined experience in secretarial and clerical works for not less than one (1) year.
- **Utility Man/ Messenger** - S/He shall assist the Consultant and the latter's staff in general, and shall act as messenger or

courier for the consultant's office in all the latter's official transactions with SBMA. He must have served as such in the Consulting Firm for not less than one (1) year.

**Note:** The above-stated requirements on years of experience may be gained cumulatively.

## **4.2. CONSTRUCTION SUPERVISION PHASE**

### **4.2.1. CONSTRUCTION SUPERVISION STAGE**

The Consultant shall perform the following task for this stage such as but not limited to

- 4.2.1.1.** The Consultant shall furnish the SBMA of electronic copies (e-file) stored in two (2) working USB drive and ten (10) hard copies thereof printed in A4 size and A3 bond papers for plans and in the standard format as provided in the template under Section 4.1.2.1.2 and Section 4.1.2.2.3 including monthly reports) :
- 4.2.1.2.** Set-up program for the preliminary testing and approval of materials testing program to include the required test as the construction progresses.
- 4.2.1.3.** Check and identify the material sources and conduct sampling and testing of materials. Approve all quarries and other material sources and all other construction materials.
- 4.2.1.4.** Provide necessary services for the continuous supervision of the construction project facilities and the procurement and installation of equipment and materials to ensure that conditions of the contract are satisfactorily adhered to.
- 4.2.1.5.** Coordinate and supervise all construction groups involved in the project, and recommend for approval methods and systems of construction.
- 4.2.1.6.** Stop any work which is not being done in accordance with the plans and specifications and the contract agreement between SBMA and Contractor.
- 4.2.1.7.** Require the removal or repair of any defective or faulty construction or of construction which could not be inspected in place or construction of a critical item expressly identified as such and which was performed without inspection.

- 4.2.1.8.** Check and/or approve as appropriate manufacturer's drawings and Contractors proposals relating to the construction of the project facilities and procurement of equipment and materials.
- 4.2.1.9.** Review, evaluate and make recommendations to SBMA on all proposals for changes by the Contractor.
- 4.2.1.10.** Prepare all necessary work orders authorizing changes in the work including altering plans and specifications, negotiating new or revise unit prices and other related activities, all for approval by SBMA.
- 4.2.1.11.** Prepare any further designs and supply all necessary working drawings to the Contractor for satisfactory execution of all works including those made necessary because any modifications and/or alterations in the original tender documents.
- 4.2.1.12.** Check as necessary, the location and alignment of all works as laid out by the Contractor and recommend acceptance or rejection of the works as constructed and equipment/material procured.
- 4.2.1.13.** Ensure all the materials to be used or incorporated in the works meet the specifications and design. Verify if necessary manufacturer's certificates as presented by the Contractor and recommend acceptance or rejection thereof.
- 4.2.1.14.** All testing materials for Quality Control are to follow DPWH Standard Specifications for Public Works and Highway (latest edition).
- 4.2.1.15.** Conduct daily safety inspections of the construction site. Identify and immediately stop any activities being done in an unsafe manner. Check that the materials are properly stored, handled and used in the project.
- 4.2.1.16.** Assist in settling disputes or differences in opinion that may arise between SBMA and Contractor excepting litigation and arbitration.
- 4.2.1.17.** Maintain all construction records, documents, files, data, reports, plans, drawings, specifications, memos, letters, and other relevant construction documents in the field office in an orderly file.
- 4.2.1.18.** Perform all other duties as necessary and incidental to the full satisfactory execution of the project.

#### **4.2.2. POST-CONSTRUCTION SERVICES STAGE**

This shall consist of preparation of assistance in the final construction report, maintenance report, as-built drawings, and attending to claims and problems arising during construction and after construction.

Upon completion of the construction supervision services stage the Consultant shall:

- 4.2.2.1.** The Consultant shall furnish the SBMA of electronic copies (e-file) stored in two (2) working USB drive and ten (10) hard copies thereof printed in A4 size and A3 bond papers for plans and in the standard format as provided in the template under Section 4.1.2.1.2 and Section 4.1.2.2.3 including all reports.
- 4.2.2.2.** Prepare and provide all necessary construction reports as part of Post Construction Reports.
- 4.2.2.3.** Issue certificates of completion, final payment certificates and maintenance certificates in accordance with the conditions of the contract.
- 4.2.2.4.** Certify and deliver to SBMA all job records, reproducible, “as-built” drawings (Mylar) plus digital copy (AutoCAD format) and the instructions necessary for the satisfactory operation and maintenance of the works.
- 4.2.2.5.** Provide assistance as required during Warranty Period (Defects Liability Period) with regards to the identification and rectification of construction deficiencies.

#### **4.2.3. EXPERTISE AND REQUIREMENTS**

The Consultant must maintain the following Key Personnel and Support Staff for the Construction Supervision Stage and Post-Construction Services Stage:

##### **4.2.3.1. Key Personnel**

- **Project Manager/Team Leader** - Must be a registered Civil Engineer who is authorized by the Consultant to undertake the overall supervision of the consulting service. Must have extensive and wide knowledge in construction supervision, field works, and project management of bridges. Minimum ten (10) years’ experience.
- **Material Engineer** - Must be a registered Civil Engineer with extensive and wide experience in material testing and quality control, coordination and administration of project activities pertinent to the project supervision and implementation of bridges, roadways and related structures. S/HE must be DPWH accredited Materials Engineer II with a minimum of five (5) years’ experience.

- **Geodetic Engineer** - Must be registered Geodetic Engineer with extensive and wide experience in survey works, coordination and administration of project activities pertinent to the project supervision and implementation of bridge/roadways & other related structures. Minimum five (5) years' experience.
- **Civil/Structural Inspector** - Must be a registered Civil Engineer with extensive and wide experience in bridge, civil/structural works, coordination and administration of activities pertinent to the design and implementation of bridges, roadways & other related structures. Minimum five (5) years' experience.
- **Electrical Inspector** - Must be a registered Electrical Engineer with substantial and varied experience in roadway/facilities, lighting and traffic signal installation, coordination and administration pertaining to bridges, roadways & lighting/traffic signal system. Minimum five (5) years' experience.
- **Quantity/Cost/Specification Engineer** - Must be a registered Civil Engineer with extensive and wide experience in quantity calculation, detailed analysis of all applicable unit price and construction cost, coordination and administration of project activities pertinent to the project supervision and implementation of bridge, roadways & other related structures. Minimum five (5) years' experience

#### **4.2.3.2. Technical Support Staff**

- **AutoCAD Operator** - Must be knowledgeable and skilled in drafting Computer-Aided-Design (CAD) plans, and must have gained experience in drafting works using CAD for not less than one (1) year.
- **Surveying Assistant** - He shall provide assistance in all surveying fieldwork. As such, he must have gained experience in surveying fieldwork for not less than one (1) year.
- **Laboratory Technician** - With extensive and wide experience in material testing & quality control coordination and

administration of project activities pertinent to bridge, roadways construction & other related structure. Minimum one (1) year experience.

**4.2.3.3. Administrative Support Staff**

- **Clerk/Encoder** - Must be knowledgeable and skillful in the use or application of MS Office and Excel software. S/He shall encode and print in final form all official correspondences and database documents. S/He shall see to it that all important data are electronically stored for later reference and use by the concerned staff. Finally, S/He shall serve as the secretary of the Consultant, records and documents custodian, time keeper, and be responsible for the taking and preparation of the minutes of all meetings. S/He must have likewise gained combined experience in secretarial and clerical works for not less than one (1) year.
- **Utility Man/ Messenger** - S/He shall assist the Consultant and the latter’s staff in general, and shall act as messenger or courier for the consultant’s office in all the latter’s official transactions with SBMA. He must have served as such in the Consulting Firm for not less than one (1) year.

**5. TIMELINES AND DELIVERABLES**

**5.1. Commencement of the consulting service.** – The Consultant shall commence the consulting service upon receipt of Notice to Proceed (NTP) as specified in the bidding documents.

**5.2. Timelines and Deliverables.** – The Consultant shall observe and meet the durations specified in the tables for Timelines and Deliverables **for the New Mount Sta Rita bridge and New 1859 PWC Bridges** as follows:

Deliverables	Timeline	Percentage Accomplishment of ABC
DESIGN PHASE		



<b>A. PREDESIGN STAGE</b>		
<b>1. INCEPTION REPORT (with minimum requirements stated in Sections 4.1.1.1, 4.1.1.2 and 4.1.1.3)</b>	14 <sup>th</sup> day	2%
<b>2. CONCEPTUAL PLAN (with minimum requirements stated in Section 4.1.1.4)</b>	21 <sup>th</sup> day	1%
<b>3. BUDGETARY COST ESTIMATE (with minimum requirements stated in Section 4.1.1.4)</b>	21 <sup>th</sup> day	1%
<b>4. PROPOSED CONSTRUCTION SCHEDULE (with minimum requirements stated in Section 4.1.1.4)</b>	21 <sup>th</sup> day	1%
<b>B. FINAL DESIGN STAGE</b>		
<b>5. APPROVED DETAILED PLANS (with minimum requirements stated in Section 4.1.2.1)</b>	75 <sup>th</sup> day	30%
<b>6. APPROVED ESTIMATES (with minimum requirements stated in Section 4.1.2.2)</b>	75 <sup>th</sup> day	10 %
<b>7. SECURING PERMITS (with minimum requirements stated in Section 4.1.2.3)</b>	100 <sup>th</sup> day	1%
<b>C. DOCUMENTATION (with minimum requirements stated in this TOR and Section 4.1.3)</b>		
<b>8. TECHNICAL SPECIFICATIONS</b>	105 <sup>th</sup> day	1%
<b>9. BIDDING DOCUMENTS</b>	105 <sup>th</sup> day	1%
<b>10. BIDDING ASSISTANCE</b>	Bidding period for the infrastructure component	2%
<b>CONSTRUCTION SUPERVISION PHASE (services and reportorial requirements stated in this TOR and Section 4.2)</b>		
<b>A. CONSTRUCTION SUPERVISION STAGE</b>	Duration of construction until issuance of	47%

	Certificate of Completion	
<b>B. POST-CONSTRUCTION SUPERVISION STAGE</b>	1 month after issuance of Certificate of Completion	3%
<b>TOTAL</b>		100%

## 6. CRITERIA FOR THE SELECTION OF THE CONSULTANT

The Consultant shall be selected using the Quality – Cost Based Selection procedure under Republic Act 9184 and **Department Order 143 series of 2022 of Department of Public Works and Highways** as shown in “ANNEX B”.

## 7. APPROVED BUDGET FOR THE CONTRACT (ABC)

The ABC for the consultancy services is **Four Million Six Hundred Fifty Thousand Pesos (Php 4,650,000.00)**. The Bid Price should constitute professional fees and other miscellaneous expenses, all of which are Value Added Tax (VAT) free.

## 8. PAYMENT SCHEME/SCHEDULE

The payment shall be in accordance to the delivery of outputs.

**8.1.** The Contract Price shall be the corrected/accepted amount proposed by the winning CONSULTANT for the project. Payment of the CONSULTANT for its services shall be made by the SBMA in accordance with item 53 of Section IV of the General Conditions of Contracts of the Bidding Document. The submittals and reports shall serve as reference for payment of reimbursable items and shall be per completion of each phases with approval and in accordance with the scheme presented in Section 5.2 of this TOR hereof and based on the outputs expected from the Consultant.

**8.2.** The Consulting Firm may request Advance Payment of fifteen percent (15%) of the approved contract cost based on requirements set forth in the General Conditions of the Contract.

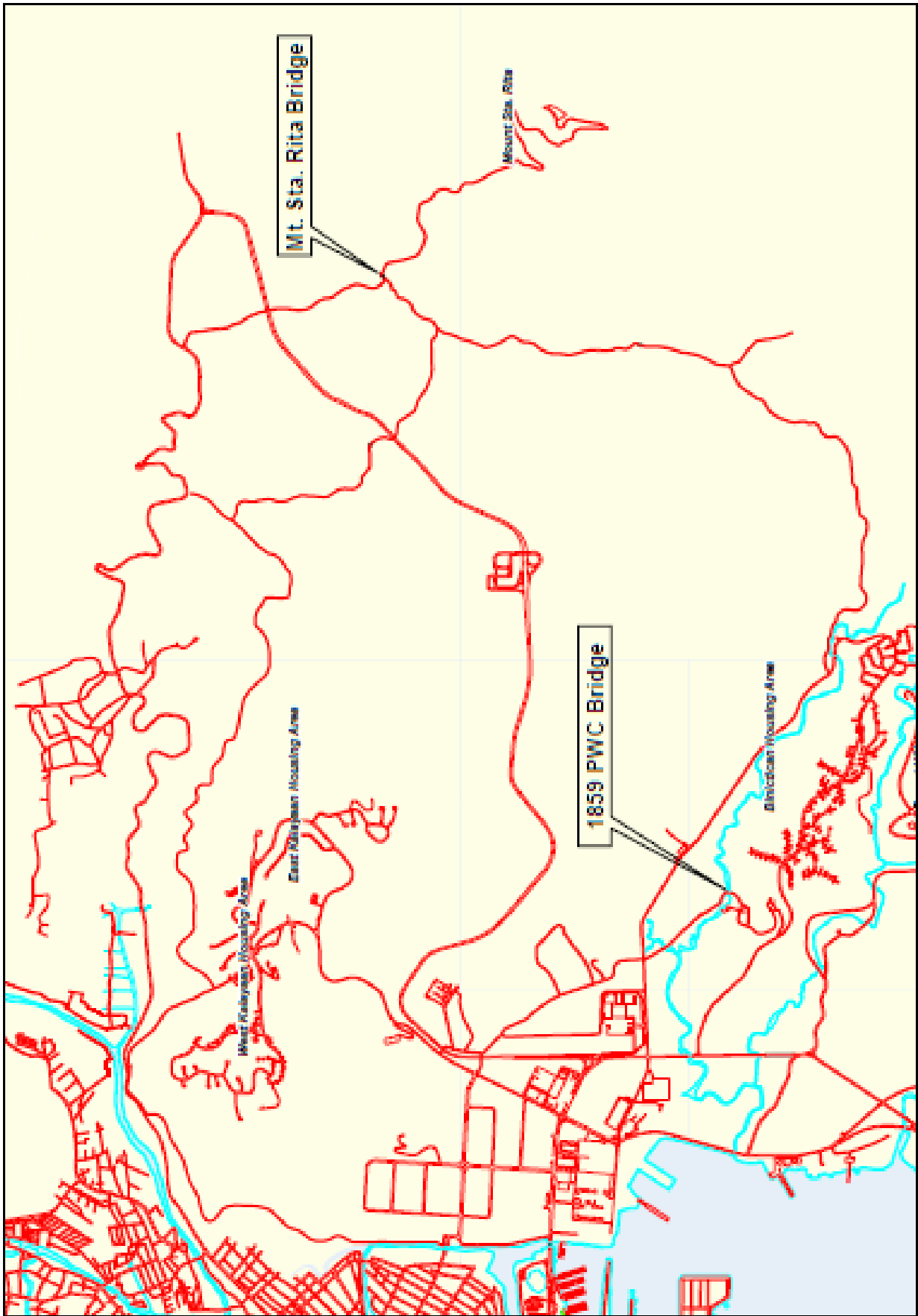
All of these payments are subject to the government accounting and auditing requirements. The Consultant is expected to be familiar with the Government Accounting and Auditing Manual (GAAM).

## **9. RESERVATION CLAUSE**

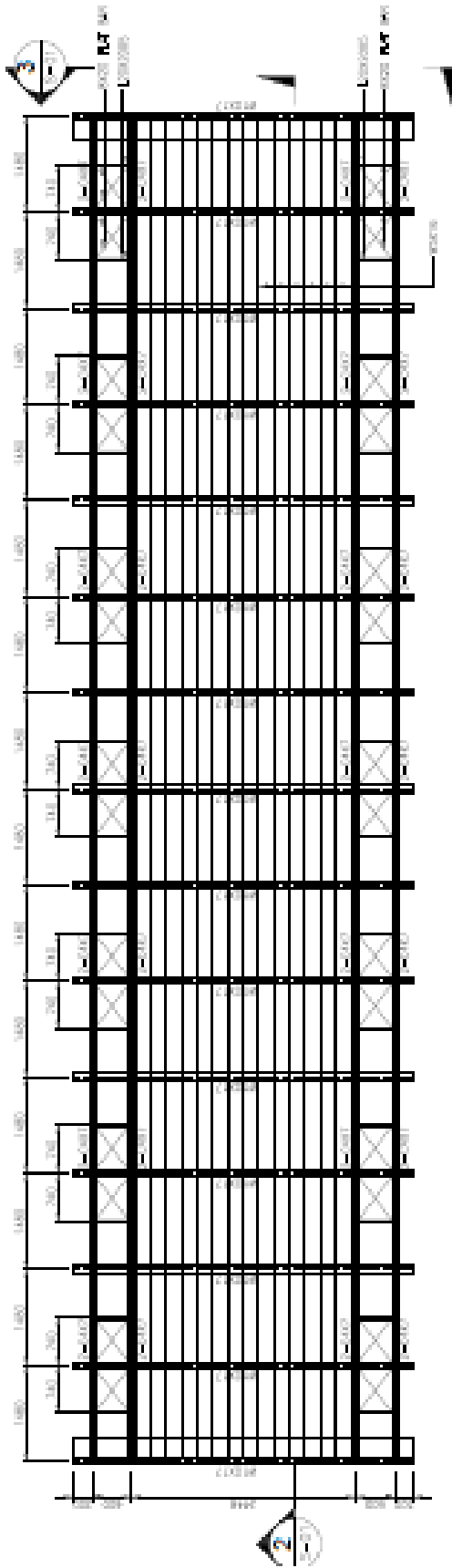
The Subic Bay Metropolitan Authority (SBMA) reserves the right to accept or reject any consultancy services rendered, to annul the consultancy process, and to reject at any time the same without incurring any liability to the Consultant.

**ANNEX A**

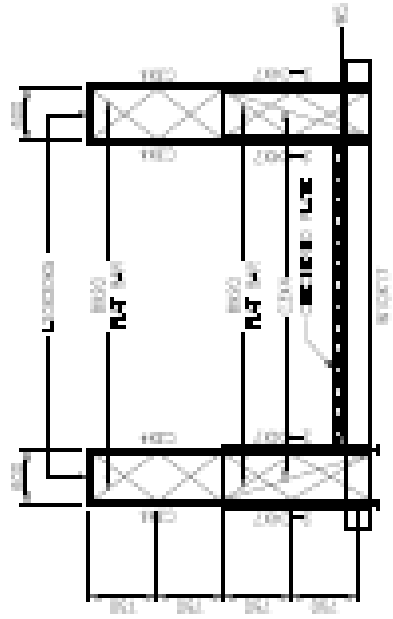
**LOCATION PLAN**



**VICINITY MAP**

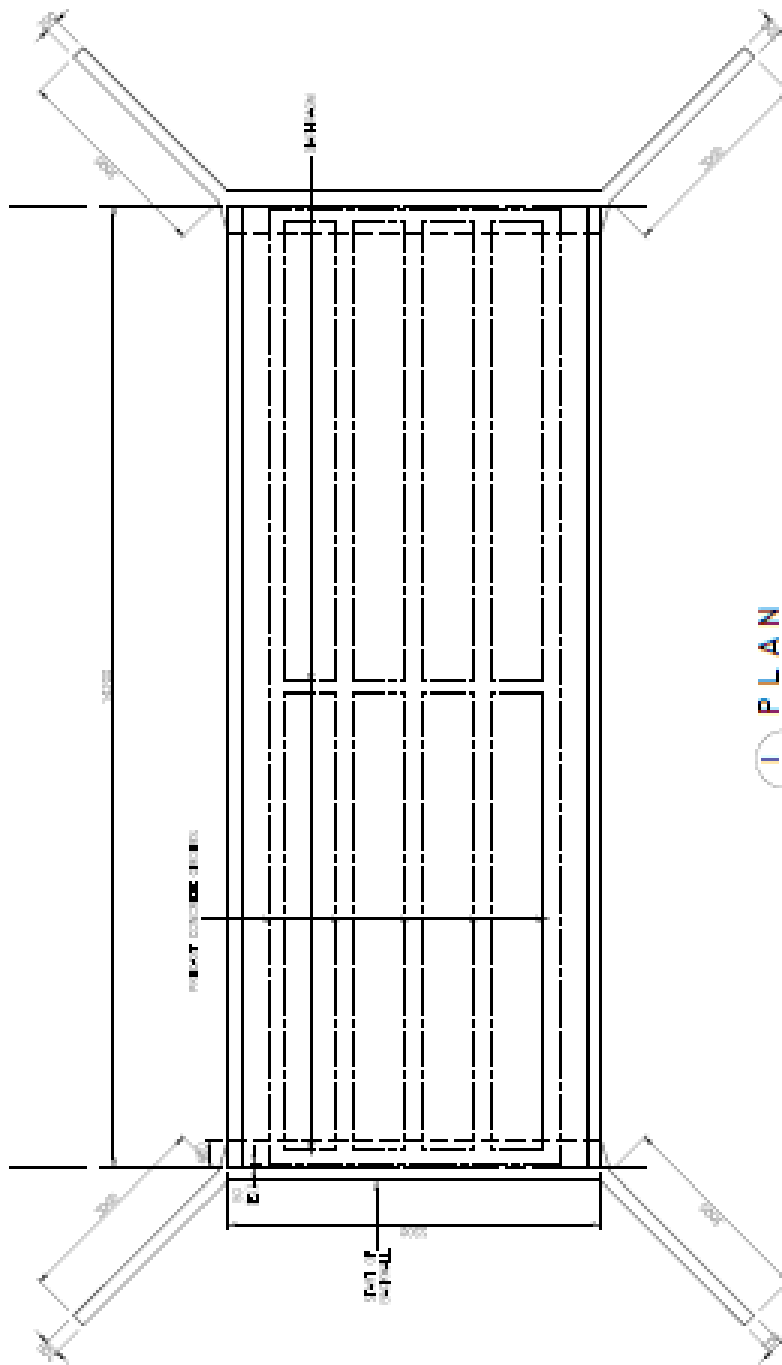


1 PLAN  
 5'-0" 1:48  
 1:2000



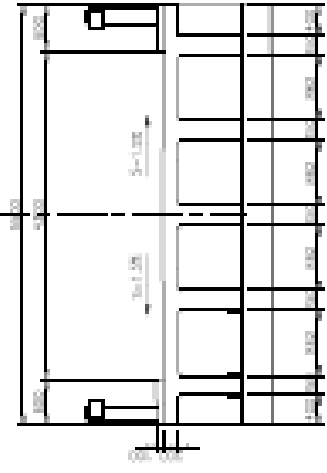
3 ELEVATION B-B  
 5'-0" 1:200  
 1:2000

EXISTING STA RITA BRIDGE



PLAN

OF P.W.C



SECTION 2  
SCALE 1:500

**EXISTING 1859 PWC BRIDGE**

# **ANNEX B**

## **CRITERIA FOR SELECTION OF CONSULTANT**

**Department Order 143 Series of 2022 of Department  
of Public Works (as attached copy)**