



TERMS OF REFERENCE

PROJECT NAME: Completion of Road Network and Drainage System at BPSU Main Campus
LOCATION: Bataan Peninsula State University, Main Campus, Balanga City Bataan

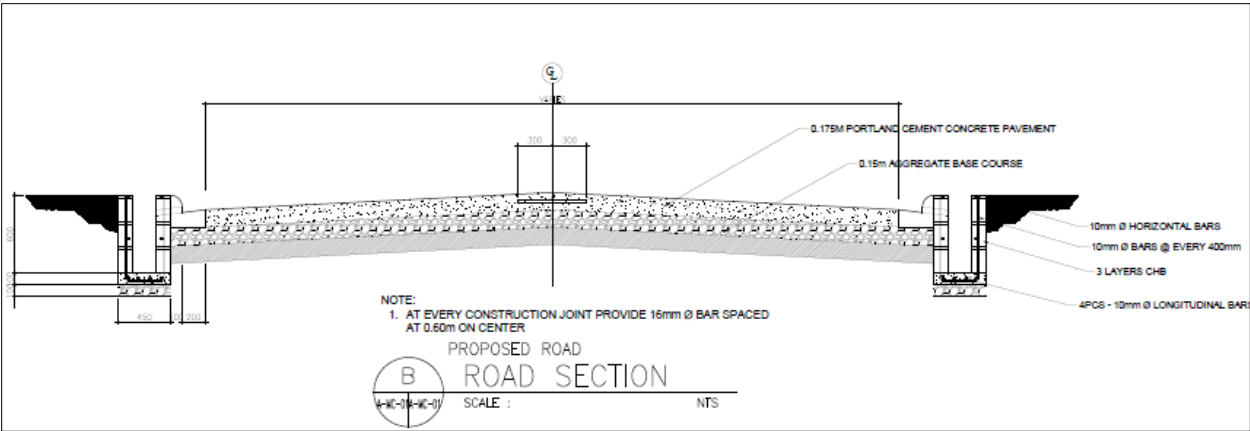
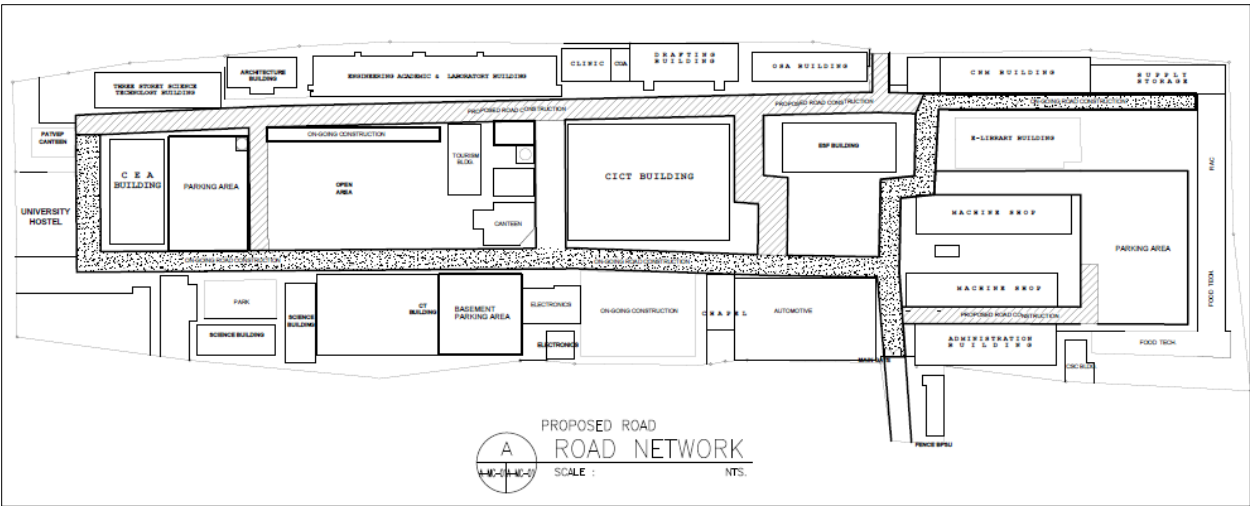
SECTION 1: THE PROJECT

I. PROJECT DESCRIPTION:

PROJECT NAME:	Completion of Road Network and Drainage System at BPSU Main Campus
LOCATION:	Bataan Peninsula State University, Main Campus
APPROVED BUDGET FOR CONTRACT (ABC):	Php 2,705,000.00
TOTAL LINEAR METER:	442.30 Im Asphaltting works 48.00 Im PCCP 417.00 Im RC Gutter
PROJECT DURATION:	150 Calendar Days

SCOPE OF WORK:

- 1. Completion of Road Network and Drainage System at BPSU Main Campus (Material and Labor works)



** For reference only of the location. Conduct site visit for accurate location and length.



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- a. Construction of 442.30 Im Asphalted Works of existing road as specified in the plan.
- b. Construction of 48.00 Im Portland Cement Concrete Pavement (PCCP) of existing road as specified in the plan.
- c. Construction of 417.00 Im reinforced Concrete canal, see plan for the details.

II. OBJECTIVES:

1. To provide a background information regarding the preparation and submission of the proposed road network and drainage system.
2. To establish a gender-neutral facilities.
3. To create a Safe and Functional and ready to use road.

- END OF SECTION -

SECTION 2: TECHNICAL SPECIFICATIONS

DIVISION 01: GENERAL REQUIREMENTS

1. The work covered under this Contract consists of the furnishing all materials, labor, equipment, transportation, incidentals, facilities, and superintendence necessary to complete the project.
2. The Contractor is expected and **required** to attend the important phases of the bidding process of the said project. All concerns and questions shall be discussed on the Pre-Bid Phase.
3. The Contractor shall be responsible for carefully examining, comparing and verifying the data furnished by the Plans and specifications, the Contractor shall submit the matter to the Architect or his authorized representative for the proper explanation or necessary correction, before any adjustment shall be made. Any adjustment by the Contractor without such determination shall be at his risk and expense.
4. Omitted or wrongly described details of work, which are manifestly necessary to carry out the true intent of the drawings and specifications, shall be performed as if fully and correctly set forth and described in the drawings and specifications.
5. The procuring entity may, from time to time, make changes in the specifications and construction drawings. However, if the cost to the Contractor shall be materially increased by such change, the Procuring Entity shall pay the Contractor for the reasonable cost in accordance with the changes.
6. The contractor shall comply with the laws, City or Municipal Ordinances and all government specifications and regulations in so far as they are binding upon or affecting the portion the work hereto. The Contractor or those engaged thereon shall obtain all necessary licenses and permits and pay all taxes or fees, which may due to the local and/or National Government in connection with the prosecution of the work. He shall also be responsible for all damages to persons or property that may occur.
7. Unless otherwise specified, all materials shall be new and free from defects and imperfection. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall be performed in the best and acceptable manner in strict accordance with the requirements of the Plans and Specifications. Preference will be given to articles or materials that are locally manufactured, conditions of quality and price being equal.



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8. When called for by the Architect, the Contractor shall furnish, for approval, full information and satisfactory evidence as to the kind and quality of materials or articles he will incorporate in the work. The contractor shall furnish, for Architect's approval, all samples when so directed.
9. The work shall be in accordance with approved samples. Materials and articles installed or used without such approval shall be at the risk of subsequent rejection. Any failure on the part of the Contractor to conform use materials that are not specified herein shall be under subsequent rejection, unless subject for approval.
10. Any alteration or revision of material usage without approval from the Architect shall make the Contractor responsible and liable in terms of guarantee, workmanship and defects.
11. Workmanship shall be in accordance with the best standard practices and all operations required under any and all parts of the Specification shall be undertaken in a neat, workman-like manner. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.
12. Any alteration or revision on the execution of drawings without approval from the Architect shall be under subsequent rejection and shall make the Contractor responsible and liable for any workmanship and execution defects.
13. Defective workmanship shall be remedied by the Contractor, at his expense. He shall not be entitled to any payment hereunder until defective workmanship has been remedied.
14. The Contractor shall provide and maintain adequate weather-tight facilities with water, light, and toilet facilities. He shall keep such places clean and free from flies. He shall remove all connections and appliances connected there with prior to the completion of the Contract and leave the premises perfectly clean.
15. The Contractor shall furnish all temporary water, lights and power and shall pay all expenses in connection therewith. Furthermore, the Contractor shall provide and pay for all water expenses for building purposes that are required by all trades.
16. The Contractor shall put up safety measures and continuously maintain adequate protection of all his work from damage and shall protect the Procuring Entity's property, as well as all materials furnished and delivered to him by the Entity. He shall make good any such damage, injury or loss, except such as may be caused by agents or employees of the Procuring Entity, or due to causes considered as an Act of God.
17. The Contractor shall enclose the site he possessed by a security fence with gate. See-through security fence shall not be allowed.
18. With respect to the construction of the buildings and other structures, the design and specifications shall conform to the standards set by:
 - a. Department of Public Works and Highways (DPWH)
 - b. National Building Code of the Philippines (NBCP) National Structural Code of the Philippines, 2010
 - c. Environmental Impact Statement as defined by the DENR other Engineering Standards.

DIVISION 02: SITE CONSTRUCTION

SEC. 02100 SITE PREPARATION:

SCOPE

Furnish equipment and perform labor required to complete demolition of the existing structures, removal of salvaged materials, and disposal of resulting trash, waste, and other vegetation. See drawings for area coverage of work involved.



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EXAMINATION OF SITE

Visit the site of the work and examine the premises to fully understand all existing conditions relative to the work. No increase in cost or extension of performance time will be considered from failure to verify and know actual site conditions.

PERMITS

Secure and pay for all necessary permits needed for the work.

PROTECTION

Protect adjacent properties, persons, shrubs, trees, lawns, structures, and utilities against harm or damage.

DISPOSAL OF MATERIALS

1. All salvageable material shall remain the property of the Owner. Hauling and stacking of salvaged materials within a 300 meter radius to Owner's specified storage shall be at the account of the Contractor.
2. All debris and other materials resulting from the demolition work shall be immediately removed from the premises and dumped at sites provided by the Contractor in a manner approved by the Architect.

DEMOLITION

1. Demolish and remove from site existing structures and other obstructions within the building and as indicated in the plans.
2. Where existing concrete on ground is to be demolished, remove all existing concrete and other obstructions to a depth of 300 mm below grade.
3. Cap all existing utility lines. Consult Owner before commencing work.

CLEARING AND GRUBBING

1. Uproot trees or cut down as shown in the plans or as directed by the Architect.
2. Protect trees indicated in the plans as "trees to be preserved".
3. Cut down trees in a manner to avoid damage to trees to be preserved. Prevent injury to structures or minimize danger to traffic.
4. Remove trees and roots and holes left behind shall be filled with suitable material and compacted in accordance with Section 02200: EARTHWORK.
5. Grub up or clear undergrowth, bushes, vegetation rubbish and all objectionable materials and dispose in accordance with item 2.01 of the Section.

REPAIRS

Repair damage done to property of any person or persons on or of the premises, by reason of the required work for Demolition. Clearing and Grubbing.

SEC. 02200 EARTHWORK:

SCOPE

- a.) Furnish material and equipment and perform labor required to complete.
 - Stripping
 - Site Grading
 - Trenching
 - Back filling
 - Compaction
 - De-watering
- b.) See drawings for location and extent of work required.

VERIFICATION OF EXISTING CONDITIONS

- a.) Verify and examine the site of work to familiarize with the character of materials to be encountered and all other existing conditions affecting the work.



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PROTECTION

- a.) Provide adequate protection measures to protect materials, men and adjoining property.
- b.) Provide shoring, sheeting and bracing to prevent caving, erosions, or gullying of sides of excavation.
- c.) Provide for surface drainage during the period of construction in such manner as to avoid creating a nuisance to adjacent areas. Keep all excavation free of water at all times.

SITE WORK

- a.) Earthwork:
 - 1. Fill or borrow materials. Granular non-plastic material, laboratory approved, inert materials from off-site source.
 - 2. Excavated materials used as backfill, approved and clean material. Free of stones not larger than 50 mm (2") dia. roots and organic materials.
 - 3. Capillary water sieves, and barrier; uniformly graded or sized, non-porous aggregates or stone respectively.
- b.) Batter boards: Second class, pest free lumber assembled are rendered secure for proper delineation's of building lines and grades.
- c.) Soil Poisoning: Product and application by Contractor accredited termite and pest control contractor. There shall be no disturbance of treated soil between application of poison and pouring concrete.
- d.) Lawns and Plantings:
 - 1. Topsoil and plant backfill: Fertile, clean, natural soil of the locality. Topsoil shall be spread in a 200mm thick layer over the scarified sub-grade. Compaction 70%.

MATERIALS

- a.) Coarse-grained fill materials, such as stone fragments, sand and gravel mix, fine sand, silty or clayey sand and gravel, shall be laboratory approved from offsite source, passing 75mm (3") sieve. The fraction passing a 0.425mm (No. 40) sieve shall have a liquid limit not to exceed 35% and plasticity index not exceeding 2%. Only coarse grained fill materials shall be used inside buildings and under parking areas, driveways and walkways.
- b.) Fine grained fill material, such as silt, clay, silty clay for clayey silt shall be laboratory approved from the site coarse passing a 0.425mm (No. 40) sieve and shall have a liquid limit not less than 40% and a plasticity index not less than 1%. Only fine grained fill material shall be used outside the limits of the buildings, for landscape purpose.
- c.) Granular fill to form a capillary water barrier shall be clean, crushed non-porous rock, crushed or crushed gravel, uniformly graded and of a size which will pass a 25mm (1") mesh screen and be retained on No.4 mesh screen.
- d.) Excavated material approved for use as backfill shall be free of stones larger than 75mm (3") in longest dimensions roots and organic materials.

STRIPPING

- a.) Strip topsoil only in areas required as shown in the plans. Remove top soil to depth indicated or as required by the Architect but if not less than 150mm in depth, prior to start of regular excavation or backfilling work.
- b.) Stock pile removed top soil separate from other excavated materials in locations designated by the Architect and spread and compact with a light roller in areas indicated in the plans or where directed by the Architect.
- c.) Cut or fill and machine grade the site area. Deposit material in loose layers not exceeding 180 mm in depth and compact to at least 95% of maximum dry density. Rough grade elevations all levels shall be approximately 300mm below the bottoms of slabs on grade, 250mm below paving finish grades and 300mm below finish grade in areas to be lawn seeded or landscaped.



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STAKES AND BATTER BOARDS

- a.) Stakes out building accurately and establish grades.
- b.) Batter boards and reference marks shall be erected at location where they will not be disturbed during construction.
- c.) Construct two permanent benchmarks of previously known elevations near the site of construction.

EXCAVATION

- a.) Excavate to the dimensions and elevations indicated on the drawings. Carry excavation to depths directed by the Architect. Should unsuitable bearing be encountered at elevations indicated, contract price shall be adjusted according to the unit price agreed upon by the Owner and the Contractor.
- b.) Excavation carried to a greater depth or size indicated or required through error, shall be corrected by filling such additional depth or size with class "D" concrete at Contractor's expense.
- c.) Bottoms of excavations shall be level, free from loose material, and brought to indicated or required levels in undisturbed earth or in compacted fill.
- d.) Excavate with proper allowance made for floor slabs, from erection, shoring, drain tile, waterproofing, masonry and adequate space for inspection of foundations.

DEWATERING

- a.) Control grading around building so that ground is pitched to prevent water from running into excavated areas of building or damaging other structures.
- b.) Pump water out of excavated areas throughout the construction period. Water shall not be conducted into adjacent developed property.

TRENCHING FOR SUB-DRAINAGE

- a.) Excavate trenches for underground utility systems and drain lines. Grade and tamp to provide firm bed trenches for drain lines.
- b.) When rock is encountered, excavate to a depth of 150mm below the bottom elevation of the pipe and fill with sand and gravel or crushed stones thoroughly compacted before laying pipe.

BACKFILLING

- a.) Prior to backfilling around structures, remove all forms, trash and debris. Use only approved backfill material and place symmetrically on all sides in layers, compacted in accordance with item 3.08 of this section.
- b.) Backfill around structures only after the concrete has attained sufficient strength to resist lateral pressure resulting from the backfill.

SOIL COMPACTIONS

- a.) Filling material to be used inside the building shall be placed in 200mm thick loose layers. Each layer shall be moistures conditioned and compacted to at least 95% of maximum dry density.

DISPOSAL OF EXCAVATED MATERIALS

- a.) Surplus materials resulting from all earthwork operations not required or unsuitable for fill or backfill shall be disposed of by the Contractor at his expense in areas of the site provided by the Contractor.

DIVISION 03 – CAST-IN PLACE CONCRETE

I. GENERAL

- A. The General condition applies to all work under this section of the specifications.
- B. Unless otherwise specified, the contractor or his sub-contractor shall furnish all materials, tools, equipment, apparatus, appliances, transportation, labor, and supervision required furnishing and placing all the reinforced concrete shown on the drawings



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C. All concrete work shall be done in accordance with the “Specifications for Concrete and Reinforced Concrete” as adopted by the National Structural Code for Buildings, and the American Concrete Institutes, “Building Code Requirements for Reinforced Concrete” (ACI-318-71) in so far as they do not conflict or are not inconsistent with specified provisions herein.

II. QUALITY AND PROPORTIONING OF CONCRETE

A. LABORATORY TEST RESULTS – Submit laboratory test reports for concrete material and mix design test as specified.

B. MINIMUM REQUIRED ULTIMATE COMPRESSIVE STRENGTH:

The quality of concrete as indicated by test specimen of cylinder at the age of 28 days shall be based on the following:

MIXTURE	STRENGTH
Class “EX-S” concrete	5,000 lbs. per sq. in
Class “AA” concrete	4,000 lbs. per sq. in
Class “A” concrete	3,000 lbs. per sq. in
Class “B” concrete	2,000 lbs. per sq. in
Class “C” concrete	1,000 lbs. per sq. in

All concrete that requires an ultimate compressive strength of 3,000 PSI and above shall be “READY-MIXED CONCRETE” and/or refer to Structural Plans in accordance with NSCP 2015.

SECTION 3: PROJECT COST ESTIMATES

The bidders shall submit the quantities and cost of the different types of works to be carried out in accordance with DPWH Department Order No. 72 series of 2012 dated October 5, 2012. In particular, the quantities and cost of each work item shall be calculated and a bill of quantities shall be prepared. The bidders shall draw up a unit price analysis for each of the main pay work items.

The unit price of each of the main work pay items shall include:

- A. Cost of the Preliminary and Detailed Architectural and Engineering Design – Should be in accordance with NEDA guidelines.
- B. Construction Cost of the Project;
 - 1. The Direct Cost are the following:
 - a. Cost of Materials to be used in doing the work item called for, which shall include the following:
 - a.1. Cost of source, including processing, crushing, stockpiling, loading, local taxes, construction and/or maintenance of haul roads, etc.
 - a.2. Expenses for hauling to project site.
 - a.3. Handling expenses
 - a.4. Storage
 - a.5. Allowance for waste and/or losses, not to exceed 5% of materials requirement.
 - b. Cost of Labor:
 - b.1. Salaries and wages as authorized by the Department of Labor and



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Employment

c. Equipment Expenses:

c.1. Rental of equipment which shall be based on the prevailing "Associated Construction Equipment Lessors, Inc." (ACEL) rental rates approved for use by the DPWH (Presently it is the 2009 ACEL Rates). Rental rates of equipment not indicated in the ACEL booklet shall be taken from the rental rates prepared by the DPWH Bureau of Equipment. For simplicity in computation, the operated rental rates are preferred over the bare rental rates as the former includes operator's wages, fringe benefits, fuel, oil, lubricants and equipment maintenance. The make, model and capacity of the equipment should be indicated in the detailed unit cost analysis.

c.2. Mobilization and demobilization shall be treated as a separate pay item. It shall be computed based on the equipment requirements of the project stipulated in the proposal and contract booklet. In no case shall mobilization and demobilization exceed 1% of the Estimated Direct Cost (EDC) of the civil works items.

2. The Indirect Cost shall consist of the following:

a. Overhead Expenses - ranges from 5 - 8% of the EDC, which includes the following:

a.1. Engineering and Administrative Supervision.

a.2. Transportation allowances.

a.3. Office Expenses, e.g., for office equipment and supplies, power and water consumption, communication and maintenance.

a.4. Premium on Contractor's All Risk Insurance (CARI).

a.5. Financing Cost.

- Premium on Bid Security
- Premium on Performance Security
- Premium on Surety for Advance Payment
- Premium on Warranty Bond (one year)

b. Contingencies - ranges from 0.5 - 3% of the EDC. These include expenses for meetings, coordination with other stakeholders, billboards (excluding Project Billboard which is a pay item under the General requirements), stages during ground breaking & inauguration ceremonies and other unforeseen events

c. Miscellaneous Expenses - ranges from 0.5 - 1% of the EDC. These include laboratory tests for quality control and plan preparation.

d. Contractor's Profit Margin – shall be 8% of EDC: for projects above Php5 Million and 10% for projects Php5 Million and below

e. VAT Component - shall be 7% of the sum of the EDC, OCM and Profit.

The following items shall not be subjected to OCM and Profit mark-up:

e.1. Mobilization and demobilization



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- e.2. Provision of Service Vehicle
- f. The following non-civil works items shall not be subjected to OCM mark-up:
 - f.1. Field/Laboratory Office & Living Quarters (Rental Basis)
 - f.2. Furnishing, Laboratory Equipment, Survey Equipment and Consumables
 - f.3. Assistance to the Engineers
 - f.4. Photographs B.7.5 Health and Safety B.7.6 Traffic Management
 - f.5. Environmental Compliance
 - f.6. Communication Equipment, etc.

SECTION 5: CONSTRUCTION PHASE CONSIDERATIONS

1. Permits and Clearance

The bidders shall defray and all expenses necessary and incidental for the Project be able to secure the Environmental Clearance Certificate (ECC), including the corresponding Tree Cutting Permit (if any tree needs to be cut from the concerned government agencies, if necessary). The contractor shall, upon authorization of the Municipal Government, make representations with the government agencies concerned to expedite the release of the same. Obtain and pay the corresponding fees for all necessary approvals, permits and certificates such as the following:

- 1. Building Permit
- 2. Occupancy Permit

2. Temporary Structures & Facilities

The contractor shall provide and maintain the following:

- 1. Temporary office and/or quarters for the contractor's project team personnel with water, light, telephone and toilet facilities.
- 2. Temporary bunkhouse/quarters for the contractor's workforce complete with toilet and bath facilities.

3. Mobilization

The contractor shall mobilize all the required project team personnel, equipment, tools and manpower with the required skills and insufficient number as may be necessary for his efficient undertaking of the project.

4. Construction Proper

The contractor shall prosecute all the works under the contract in strict accord with standard engineering methodology and procedures and shall be responsible for maintaining cleanliness and orderliness in the project area throughout the duration of the contract. The Contractor shall deploy qualified workers with necessary certification.

5. Electrification

The contractor shall pay to the local power utility the cost of providing the additional electrical distribution facilities for the project.

6. Material Testing

All material testing shall be conducted by the accredited testing laboratories.



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7. Subcontracts

Subcontracting is not allowed.

8. Key Personnel

The key personnel must meet the required minimum years of experience set below:

Key Personnel	General Experience	Relevant Experience
1 – Project Engineer	5 years	5 years
1- Safety Officer 3	Completed 88 hours	n/a
1 – Foreman	10 years	5 years
5 – Skilled	5 years	3 years
10 – Helper	1 year	1 year

9. Equipment

The minimum major equipment requirements are the following:

Equipment	Capacity	Number of Units
Road Roller	-	1
Backhoe with pavement breaker	0.80 cu.m	1
Dump truck	12 cu.yd	1

SECTION 6: SUBMITTALS

I. BIDDING REQUIREMENTS:

A. Documents Comprising the Bid: Eligibility and Technical Components

4 Copies (1 original copy and 3 triplicate copies) of bid documents

- a. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- b. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder’s affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- c. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- d. A List of Contractor’s key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

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

B. Documents Comprising the Bid: Financial Component

4 Copies (1 original copy and 3 triplicate copies) of bid documents

- a. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.



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

Prepared by:

A handwritten signature in black ink, appearing to read "R. Umerez", written over a horizontal line.

Ar. Roxette S. Umerez, uap

BPSU, TWG Head for Infrastructure

Noted by:

A handwritten signature in black ink, appearing to read "A. Valentos", written over a horizontal line.

Dr. Alfredo D. Valentos, PME

PPES Director

Recommending Approval by:

(Original copy signed)

Dr. Edmundo C. Tungol

Vice President, Admin and Finance

Approved by:

(Original copy signed)

Dr. Gregorio J. Rodis

University President