

PHILIPPINE BIDDING DOCUMENTS
(As Harmonized with Development Partners)

**Procurement of
INFRASTRUCTURE
PROJECTS**

Government of the Republic of the Philippines

**CONSTRUCTION OF FABRICATION LABORATORY
(UTILIZING THE DESIGN AND BUILD SCHEME)/
INFRA -2021-01**

**Sixth Edition
July 2020**

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the “Works”) through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. 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 (IRR) of Republic Act (RA) No. 9184.

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

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; 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 Works 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 Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for 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 notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities 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 names of the Project, Contract, and Procuring Entity, in addition to 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.

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

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.

CDA – Cooperative Development Authority.

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])

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.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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]).

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.

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.

PCAB – Philippine Contractors Accreditation Board.

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.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria.

The IB should be incorporated into the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.



Republic of the Philippines

DEPARTMENT OF SCIENCE AND TECHNOLOGY

PHILIPPINE SCIENCE HIGH SCHOOL - CALABARZON REGION CAMPUS



Certificate No.: SCP000240Q

Invitation to Bid for the
Construction of Fabrication Laboratory
(Utilizing the Design and Build Scheme)/INFRA-2021-01

1. The ***Philippine Science High School CALABARZON Region Campus***, through the ***National Expenditure Program (NEP) 2021*** intends to apply the sum of ***TWENTY MILLION PESOS ONLY (₱20,000,000.00)*** being the Approved Budget for the Contract (ABC) to payments under the contract for the ***Construction of Fabrication Laboratory Utilizing the Design and Build Scheme/INFRA-2021-01***. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The ***Philippine Science High School CALABARZON Region Campus*** now invites bids for the above Procurement Project. Completion of the Works is required ***within 300 calendar days***. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from ***Philippine Science High School CALABARZON Region Campus*** and inspect the Bidding Documents at the address given below from ***8:00am to 5:00pm***.
5. A complete set of Bidding Documents may be acquired by interested bidders on ***November 11, 2020 up to before the bid opening on December 1, 2020*** from given address and website/s below ***and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Twenty Five Thousand Pesos (PhP25, 000.00)***. The Procuring Entity shall allow the bidder to present its proof of payment for the fees ***in person, or through electronic means***.
6. The ***Philippine Science High School CALABARZON Region Campus*** will hold a Pre-Bid Conference¹ on ***November 19, 2020, 11:00AM*** at the ***Conference Room, Administration Building, PSHS-CALABARZONRC, Brgy. Sampaga, Batangas City***, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below, on or before ***December 1, 2020, 11:00AM***. Late bids shall not be accepted.

¹ May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a pre-bid conference.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be on **December 1, 2020, 11:05AM** at the given address below. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The **Philippine Science High School CALABARZON Region Campus** 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 Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
11. For further information, please refer to:

MARY MEDIATRIX B. ARROYO
BAC Secretariat
Philippine Science High School CALABARZON Region Campus
Brgy. Sampaga, Batangas City
(043) 724-6199
bac@cbzrc.pshs.edu.ph
https://cbzrc.pshs.edu.ph/

12. You may visit the following websites:

For downloading of Bidding Documents: <https://cbzrc.pshs.edu.ph/>
November 11, 2020



MARY ANGEL L. GAVINA
BAC Chairperson – Infrastructure

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, *Philippine Science High School CALABARZON Region Campus* invites Bids for the Construction of Fabrication Laboratory (Utilizing the Design and Build Scheme), with Project Identification Number INFRA-2021-01.

[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]

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

2. Funding Information

2.1. The GOP through the source of funding as indicated below for *FY 2021* in the amount of *Twenty Million Pesos (PhP20,000,000.00)*.

2.2. The source of funding is:

- a. NGA, the National Expenditure Program.

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 Manual 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 invitation to bid 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 inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) 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, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, 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. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA’s CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be “similar” to the contract to be bid if it has the major categories of work stated in the **BDS**.

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated 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.

7. Subcontracts

- 7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

- a. Subcontracting is not allowed.

- 7.1. *[If Procuring Entity has determined that subcontracting is allowed during the bidding , state:]* The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criterial 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. *[If subcontracting is allowed during the contract implementation stage, state:]* 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 Contractor 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 Contractor'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 and either at its physical address 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 IX. Checklist of Technical and Financial Documents**.
- 10.2. 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.
- 10.3. 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**.
- 10.4. 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**.

- 10.5. 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**.

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 IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. 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. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

- 14.1. 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.
- 14.2. *Payment of the contract price shall be made in:*

- a. Philippine Pesos.

15. Bid Security

- 15.1. The Bidder shall submit a Bid Securing Declaration 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**.
- 15.2. The Bid and bid security shall be valid for 120 calendar days from bid opening. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy 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 to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

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**.

18. Opening and Preliminary Examination of Bids

- 18.1. 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.

- 18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's 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 2016 revised IRR of RA No. 9184.

- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.
- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

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

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 (BDS)

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	
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: <i>construction of laboratories or workshops</i>
7.1	<i>Not Applicable.</i>
10.3	<i>Not Applicable.</i>
10.4	<p>The key personnel must meet the required minimum years of experience set below:</p> <p>FOR DESIGN PERSONNEL The key professionals and the respective qualifications of the DESIGN PERSONNEL shall be as follows:</p> <p>A. DESIGN ARCHITECT The Design Architect must be duly-licensed with at least five (5) years of experience in the design of residential, academic, or institutional facilities. The five-year experience as Junior Architect (apprentice) shall be counted.</p> <p>B. STRUCTURAL ENGINEER The Structural Engineer must be a duly-licensed Civil Engineer with at least five (5) years of experience in structural design of academic or institutional facilities.</p> <p>C. PROFESSIONAL ELECTRICAL ENGINEER The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years of experience. The 5-year experience as Registered Electrical Engineer shall be included in the computation of the 5-year experience.</p> <p>D. PROFESSIONAL MECHANICAL ENGINEER The Mechanical Engineer must be a duly-licensed Professional Mechanical Engineer with at least five (5) years of experience in HVAC and fire protection systems. The 5-year experience as Registered Mechanical Engineer shall be included in the computation of the 5-year experience.</p> <p>E. SANITARY ENGINEER The Sanitary Engineer must be duly-licensed with at least five (5) years of experience in the design of building water supply and distribution and plumbing.</p> <p>CONSTRUCTION PERSONNEL The key professionals and the respective qualifications of the CONSTRUCTION PERSONNEL shall be as follows:</p> <p>A. PROJECT MANAGER The Project Manager shall be a licensed architect or engineer with at least five</p>

(5) years relevant experience on similar and comparable projects in different locations. The Project Manager should have a proven record of managerial capability through the directing/managing of major civil engineering works, including projects of a similar magnitude.

B. PROJECT ENGINEER/ARCHITECT

The Project Engineer/Architect shall be a licensed architect or engineer with at least five (5) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

C. MATERIALS ENGINEER

The Materials Engineer must be duly licensed and DPWH accredited with at least five (5) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

D. PROFESSIONAL ELECTRICAL ENGINEER

The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years of experience. The 5-year experience as Registered Electrical Engineer shall be included in the computation of the 5-year experience.

E. PROFESSIONAL MECHANICAL ENGINEER

The Mechanical Engineer must be a duly-licensed Professional Mechanical Engineer with at least five (5) years of experience in HVAC and fire protection systems. The 5 year experience as Registered Mechanical Engineer shall be included in the computation of the 5 year experience

F. SANITARY ENGINEER

The Sanitary Engineer must be duly-licensed with at least five (5) years of experience in similar and comparable projects in the installation of building water supply and distribution and plumbing.

G. CONSTRUCTION FOREMAN

The Foreman must have at least five (5) years of experience in similar and comparable projects.

H. SAFETY OFFICER

The safety officer must be an accredited safety practitioner by the Department of Labor and Employment (DOLE) and has undergone the prescribed 40-hour Construction Safety and Health Training (COSH).

10.5	The minimum major equipment requirements are the following:		
	<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>
	Backhoe	1 cu.m	1
	Dump Truck		1
	Pay Loader		1
	Walk Behind Roller		1

12	<i>Provide value engineering analysis on all prepared construction documents.</i>
15.1	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 PhP400,000.00 , if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than PhP1, 000,000.00 if bid security is in Surety Bond.
19.2	Partial bids are allowed, as follows: <i>Not Applicable.</i>
20	<i>Not Applicable.</i>
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the DOLE, and other acceptable tools of project scheduling.

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 Contractor, 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.

2. Sectional Completion of Works

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

3. Possession of Site

4.1. The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC**, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

4.2. If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

- 5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.
- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

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

7. Warranty

- 7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the SCC.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the SCC, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

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

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in ITB Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex “E” of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the SCC, the Dayworks rates in the Contractor’s Bid shall be used for small additional amounts of work only when the Procuring Entity’s Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity’s Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the SCC.

11.2. The Contractor shall submit to the Procuring Entity’s Representative for approval an updated Program of Work at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity’s Representative may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor’s accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the SCC, subject to the requirements in Annex “E” of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity’s Representative/Project Engineer. Except as otherwise stipulated in the SCC, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

- 15.1. If required, the Contractor will provide “as built” Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity’s Representative’s approval, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC 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 Works procured. 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	
2	<i>Not Applicable.</i>
4.1	<i>[Specify the schedule of delivery of the possession of the site to the Contractor, whether full or in part.]</i>
6	The site investigation reports are: <i>[list here the required site investigation reports.]</i>
7.2	Fifteen (15) years.
10	a. Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within 10 days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is <i>[insert amount]</i> .
13	The amount of the advance payment is <i>[insert amount as percentage of the contract price that shall not exceed 15% of the total contract price and schedule of payment]</i> .
14	Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	The date by which operating and maintenance manuals are required is <i>[date]</i> . The date by which "as built" drawings are required is <i>[date]</i> .
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is <i>[amount in local currency]</i> .

Section VI. Specifications

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of international competitive bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is mandatory. Most specifications are normally written specially by the Procuring Entity or its representative to suit the Works at hand. There is no standard set of Specifications for universal application in all sectors in all regions, but there are established principles and practices, which are reflected in these PBDs.

There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, ports, railways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, although not necessarily to be used in a particular Works Contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for goods, materials, and workmanship, recognized international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that goods, materials, and workmanship that meet other authoritative standards, and which ensure substantially equal or higher quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the SCC.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be

accepted subject to the Procuring Entity's Representative's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Procuring Entity's Representative at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's Representative's consent. In the event the Procuring Entity's Representative determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

These notes are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final Bidding Documents.

Section VII. Drawings

Not Applicable.

Section VIII. Bill of Quantities

Notes on the Bill of Quantities

Objectives

The objectives of the Bill of Quantities are:

- a. to provide sufficient information on the quantities of Works to be performed to enable Bids to be prepared efficiently and accurately; and
- b. when a Contract has been entered into, to provide a priced Bill of Quantities for use in the periodic valuation of Works executed.

In order to attain these objectives, Works should be itemized in the Bill of Quantities in sufficient detail to distinguish between the different classes of Works, or between Works of the same nature carried out in different locations or in other circumstances which may give rise to different considerations of cost. Consistent with these requirements, the layout and content of the Bill of Quantities should be as simple and brief as possible.

Daywork Schedule

A Daywork Schedule should be included only if the probability of unforeseen work, outside the items included in the Bill of Quantities, is high. To facilitate checking by the Entity of the realism of rates quoted by the Bidders, the Daywork Schedule should normally comprise the following:

- a. A list of the various classes of labor, materials, and Constructional Plant for which basic daywork rates or prices are to be inserted by the Bidder, together with a statement of the conditions under which the Contractor will be paid for work executed on a daywork basis.
- b. Nominal quantities for each item of Daywork, to be priced by each Bidder at Daywork rates as Bid. The rate to be entered by the Bidder against each basic Daywork item should include the Contractor's profit, overheads, supervision, and other charges.

Provisional Sums

A general provision for physical contingencies (quantity overruns) may be made by including a provisional sum in the Summary Bill of Quantities. Similarly, a contingency allowance for possible price increases should be provided as a provisional sum in the Summary Bill of Quantities. The inclusion of such provisional sums often facilitates budgetary approval by avoiding the need to request periodic supplementary approvals as the future need arises. Where such provisional sums or contingency allowances are used, the SCC should state the manner in which they will be used, and under whose authority (usually the Procuring Entity's Representative's).

The estimated cost of specialized work to be carried out, or of special goods to be supplied, by other contractors should be indicated in the relevant part of the Bill of Quantities as a particular provisional sum with an appropriate brief description. A separate procurement procedure is normally carried out by the Procuring Entity to select such specialized contractors. To provide an element of competition among the Bidders in respect of any facilities, amenities, attendance, etc., to be provided by the successful Bidder as prime Contractor for the use and convenience of the specialist contractors, each related provisional sum should be followed by an item in the Bill of Quantities inviting the Bidder to quote a sum for such amenities, facilities, attendance, etc.

Signature Box

A signature box shall be added at the bottom of each page of the Bill of Quantities where the authorized representative of the Bidder shall affix his signature. Failure of the authorized representative to sign each and every page of the Bill of Quantities shall be a cause for rejection of his bid.

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

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary “pass/fail” criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

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

Technical Documents

- (f) 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**
- (g) Statement of the bidder’s Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules;
and
- (h) Philippine Contractors Accreditation Board (PCAB) License;
or
Special PCAB License in case of Joint Ventures;
and registration for the type and cost of the contract to be bid; **and**
- (i) 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**
- (j) Project Requirements, which shall include the following:
 - a. Organizational chart for the contract to be bid;
 - b. List of contractor’s key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
 - c. List of contractor’s major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- (k) 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

- (l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder'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**
- (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

- (n) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR 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

- (o) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

- (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- (q) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- (r) Cash Flow by Quarter.





Republic of the Philippines

DEPARTMENT OF SCIENCE AND TECHNOLOGY

PHILIPPINE SCIENCE HIGH SCHOOL - CALABARZON REGION CAMPUS



Certificate No.: SCP000240Q

TERMS OF REFERENCE
FOR THE PROCUREMENT AND IMPLEMENTATION
OF THE PROJECT **CONSTRUCTION OF FABRICATION LABORATORY**
(UTILIZING THE DESIGN AND BUILD SCHEME)

I. BACKGROUND OF THE PROJECT

The PHILIPPINE SCIENCE HIGH SCHOOL-CALABARZON REGION CAMPUS (PSHS-CALABARZONRC) through the approved allocation for the Construction of Fabrication Laboratory Utilizing Design and Build Scheme amounting to TWENTY MILLION PESOS (P20,000,000.00) under FY 2021 NEP intends to apply the sum of **TWENTY MILLION PESOS ONLY (P20,000,000.00)** being the APPROVED BUDGET for the CONTRACT (ABC) on the **CONSTRUCTION OF FABRICATION LABORATORY UTILIZING THE DESIGN AND BUILD SCHEME.**

The project will involve the Design and Build Scheme leading to the construction of the Fabrication Laboratory pursuant to the technical specifications indicated in this Terms of Reference, and the PSHS System Building Standards and Specifications, enclosed herein.

The project will have an indicated cost of **TWENTY MILLION PESOS ONLY (P20,000,000.00)**, including but not limited to all taxes and applicable permits, licenses and clearances, painting works, tile works, glass works and built-in furnishings in which a maximum of 3% shall be allocated for the design and the balance for the Civil Works.

II. PROJECT ELEMENTS/COMPONENTS

The construction and design of the Fabrication Laboratory must comply with the minimum specifications and standards set forth by the National Building Code of the Philippines (PD 1096- R.A. 6541 Revision); Accessibility Law (BP 344), National Structural Code of the Philippines, Civil Engineering Law (R.A. 544), Electrical Engineering Law (RA 7920), Mechanical Engineering Law (RA 5336), Plumbing Code (RA 1378, 1993-1994 Revisions), Fire Code (RA 9514); Philippine Green Building Code (PD1096); and other related safety, health, labor and sanitary laws.

Engineering surveys and investigations will be submitted by the winning bidder. Surveys and investigations of the site includes boundaries of the property, elevations, and contours at 0.5m interval, soil tests, location, dimension, floor elevations and other pertinent data on existing buildings and improvements (roads, parking areas, mature trees) and existing utility lines.

Detailed design will also be submitted by the winning bidder including but not limited to the following:

- Preparation of Detailed Design Drawings based on the approved Design Development Drawings and Design Parameters including any revisions and refinements as approved and required by PSHS-CALABARZONRC Detailed Architectural Plans
- Detailed Structural Plans
- Detailed Electrical Plans
- Detailed Mechanical Plans
- Detailed Sanitary and Plumbing Plans
- Structural Computations including Soil Boring Test Results and Seismic Analysis



- General Notes and Technical Specifications describing type and quality of materials and equipment to be used, manner of construction and the general conditions under which the project is to be constructed
- Detailed Bill of Quantities, Cost Estimates including a summary sheet indicating the unit prices of construction materials, labor rates and equipment rentals.
- Summary of Works

As a rule, contract implementation guidelines for procurement of infrastructure projects shall comply with Annex E and guidelines for the implementation of contracts for Design and Build infrastructure projects shall comply with Annex G of the Revised IRR of RA 9184. The following provisions shall supplement these procedures:

1. No works shall commence unless the contractor has submitted the prescribed detailed drawings as requirements for the Building Permit and the PSHS-CALABARZONRC has given written approval, Work execution shall be in accordance with reviewed and approved documents.
2. The contractor shall be responsible for obtaining all necessary information as to risks, contingencies and other circumstances which may affect the works and shall prepare and submit all necessary documents specified by the concerned Building Officials to meet all regulatory approvals as specified in the contract documents.
3. The contractor shall submit a detailed program of works within fourteen (14) calendar days after issuance of the Notice to Proceed for approval by the procuring entity that shall include among others:
 - The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and constructions
 - Periods for review of specific outputs and any other submissions and approvals;
 - Sequence of timing for inspection and tests;
 - General description of the design and construction methods to be adopted
 - Number and names of personnel to be assigned for each stage of the work
 - List of equipment required on site for each stage of the work
 - Description of the quality control system to be utilized for the project
4. Any errors, omissions, inconsistencies, inadequacies, or failure submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the contractor's cost. If the contractor wishes to modify the design or document which has been previously submitted, reviewed, and approved, the contractor shall notify the PSHS-CALABARZONRC within a reasonable period of time and shall shoulder the cost of such changes
5. As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:
 - Change orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the contractor shall be implemented by the contractor at no



additional cost to PSHS-CALABARZONRC

- Provided that the contractor suffers delay and/or incurs costs due to changes or errors in the PSHS-CALABARZONRC performance specifications and parameters, the contractor shall be entitled to either one of the following:
 - Any extension of time for any such delays under Section 10 of Annex E of the Revised IRR RA 9184;
 - Payment for such costs as specified in the contract documents provided that the cumulative amount of the variation order does not exceed ten percent (10%) of the original project cost.
- The contract documents shall include the manner and schedule of payment specifying the estimated contract amount and installments in which the contract will be paid.
- The contractor shall be entitled to advance payment subject to the provisions of Section 4 of Annex E, Revised IRR RA 9184.
- The PSHS-CALABARZONRC shall define the quality control procedures for the design and construction in accordance with PSHS-CALABARZONRC guidelines and shall issue the proper certificates of acceptance for sections of the works or whole of the works as provided for in the contract documents.
- The contractor shall provide all necessary equipment, personnel, instruments, documents, and others to carry out specified tests.
- This design and build project shall have a minimum Defects Liability period of one year after contract completion or as provided for in the contract documents. This is without prejudice to the liabilities imposed upon the engineer/architect who drew up plans and specifications for building sanctioned under Section 1723 of the New Civil Code of the Philippines.
- The contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty period of 15 years for permanent structures/buildings as specified in Section 62.2.3.2 of the Revised IRR of RA 9184.

The project will consist of 2 elements: Design and Build components for the Construction of Fabrication Laboratory of Philippine Science High School CALABARZON Region Campus. The required spaces are listed below

III. CONCEPTUAL DESIGN

The Design Project

The proposed Fabrication Laboratory shall be adjacent to Science Research Facility facing the southern part direction and have One (1) 2-storey building consisting of 3 rooms with



dimensions and space areas consistent with the PSHS Building Standards and Specifications, enclosed. The building shall have the following specifications:

Rooms	Qty.	Space Requirements	Total
Ground Floor			
Façade pavement	1	60m ²	60.0m ²
Display Area	1	40m ²	40.0m ²
Fabrication Workspace	1	300m ²	300.0m ²
Woodworking area			
Machining area			
Makers space			
Storage Area			
Electronics Area			
Digital Fabrication			
Tool and Die			
Male and Female Comfort Room (L-R)	2	12.25m ²	24.5m ²
Second Floor			
Drafting Room	1	96m ²	96.0m ²
Design Studio area w/ Aircon	1	60m ²	60.0m ²
Intellectual Property Office	1	40m ²	40.0m ²
Male and Female Comfort Room (L-R)	2	12.25m ²	24.5m ²
Total			645.0 m²

Inventions or designs do not suddenly appear from nowhere. They are the result of bringing together technologies to meet human needs or to solve problems. Fabrication Laboratory shall house the group of hobbyist, craftsman, and creative scholars of the school system that will perform design activity and prototyping of potential invention or design. It is assumed that the building shall be well designed to encourage better student performance and makes an impression to the community about the importance of education that the Department of Science and Technology has to offer. The design shall be disaster resistant to achieve the most successful way to mitigate losses of life, and property.

The **façade** of the building should be in modern minimalist in design to distinguish its structure from its neighboring buildings.

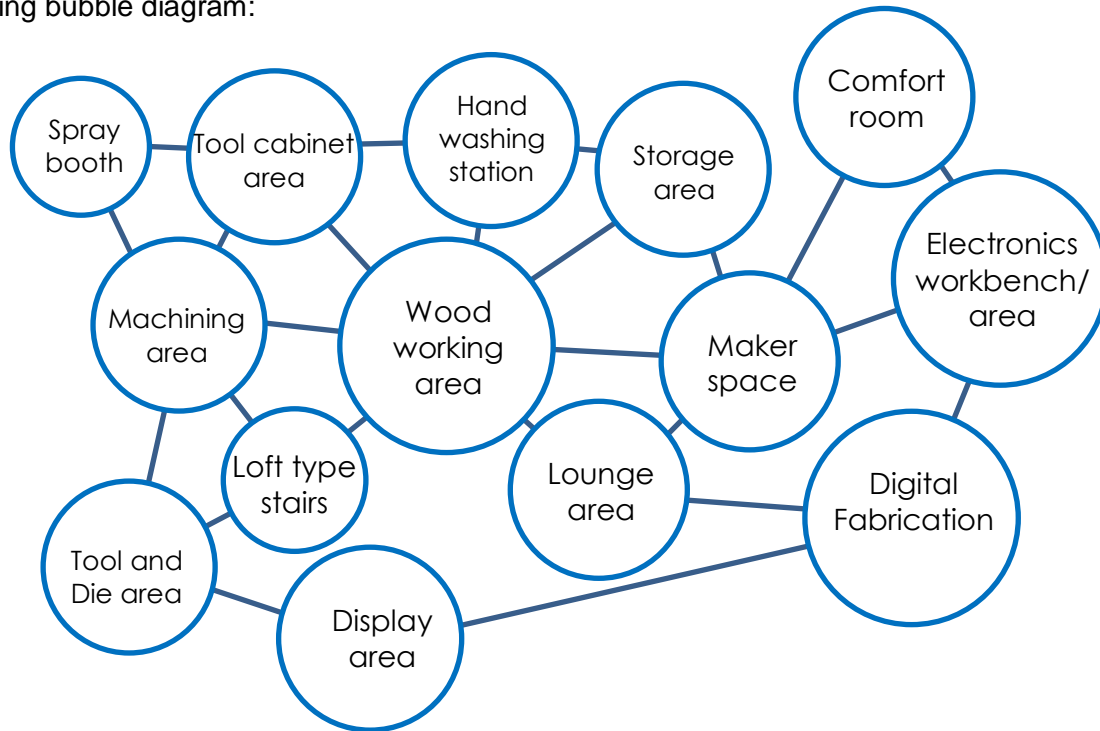
The building shall be protected by a Magnetic door secured by a card reader with three fire exit doors for emergency evacuation. The ground floor of this building should observe traffic flow and continuity when it comes to layout. The entrance of the building is intended for creative display of students innovative output so it is designed for at least 5.0m x 12.0m **display area**. The contractor/designer should provide two access for the fabrication lab, one is for the woodworking area and the other is the digital fabrication space. This is to regulate traffic flow of three to four classes entering the building and even safety when it comes to evacuation.

To completely manage the traffic flow, it is essential that electronics workbench, digital fabrication, and makerspace should be adjacent to regulate the use of related tools and resources. While machining, woodworking area and makerspace should be adjacent to the tool cabinet area and storage for convenience in facilitating the work flow and speed up one's work. The handwashing station and comfort room should be strategically located near woodworking and electronics workbench to facilitate good housekeeping.



Tool cabinets spray booth, storage area and handwashing station are just part of the layout, this is only consideration for electrical connection and plumbing layout. All areas indicated should be placed facing the wall to maximize space.

For convenience in laying out important areas in the Fabrication workspace refer to the following bubble diagram:



The building shall use the mezzanine-type design which puts heavy emphasis on light and space. Since the mezzanine type design will be used, the center of the building will be open to the double-height ceilinged floor below. The loft type stair shall be placed near machining and wood working area with the lounge area beneath the stairs to maximize space. Its landing (1.5m x 1.8m) will serve as the stage for presentation, it is an L shape stair attached to a brick wall that shows elegance and artistry. Its staircase components should match with the brick wall layout.

Second floor of the Fabrication Laboratory shall house one (1) Drafting Room and (1) Design Studio for solving design problems. Drafting room should be designed as a wide space (8.0 x 12.0m) to allow mobility inside the room and provide space for better thinking. The contractor should provide a chalk board using the attached design of black board. This area should be adjacent to the Drafting room and should utilize green school features like excellent indoor air quality, and good acoustics, that will allow students to learn best as they are engaged and inspired.

The design shall have facility for fire-extinguishing systems in every level that includes automatic sprinkler made of wrought iron or galvanized steel that has sufficient strength to withstand water pressure when ready for service, automatic chemical extinguishers, and fire alarm system. Scholars and even staff feel that the school is safe if they feel they are free from any threat or hazard relating to fire. A box or cabinet where fire hoses, valves and other



equipment are stored and arranged for firefighting shall be also considered to mitigate loss of life and property.

The Fabrication Laboratory we aim for Philippine Science High School resembles with features and facilities parallel to other fabrication Laboratories in Europe and United States of America.

CONCRETE WORKS

FORMWORKS

The formwork shall be designed for the loads, lateral pressure and allowable stresses outlined in the "RECOMMENDED FORMWORK" (ACI 347). All formworks shall be made of phenolic board and supported by steel acro-post or equivalent.

CONCRETE REINFORCING- REINFORCING STEEL BARS

All reinforcements shall be weldable deformed bars, new and free from rust, oil, defect, grease, or kinks. They shall conform to the ASTM A615 "SPECIFICATION FOR BILLET STEEL FOR CONCRETE REINFORCEMENT" as manufactured by "Pag-Asa Steel Works, Inc.", "Capitol Steel", and "Steel Asia" or approved equal. Strength of Reinforcing bars shall conform and have a minimum grade of PNS Grade 40.

TIE WIRES

Shall be Ga. #16 G.I

CAST-IN-PLACE CONCRETE

This specification covers ready-mixed concrete manufactured and delivered to a purchaser in a freshly mixed and unhardened state as hereinafter specified. Requirements for quality of concrete shall be either as hereinafter specified or as specified by the purchaser. In any case where the requirements of the purchaser differ from those in this specification, the purchaser's specification shall govern. This specification does not cover the placement, consolidation, curing, or protection of the concrete after delivery to the purchaser.

MASONRY WORKS

CHB

Concrete hollow blocks shall be of standard manufactured machine-vibrated and shall have fine and even texture and well defines edges. Concrete hollow blocks to be used shall conform to the requirements of ASTM Specification C-90 and PNS 16. Dimensions and tolerances shall be as individually specified on plans.

STEEL REINFORCEMENT FOR CHB BLOCKS

10 mmØ shall be used for CHB 4" thick and 5" thick. All reinforcements shall be weldable deformed bars free from rust, oil, defect, grease, or kinks.

TIE WIRES

Shall be Ga. #16 G.I



PLASTERING WORKS

The required sand for plastering works shall be white sand or vibro sand.

GLASS WALL

The left side of the Drafting room facing the Fabrication workspace shall be frosted glass walls.

DOORS

There shall be a minimum of three entrance points on the Fabrication Laboratory.

SOLID WOOD DOOR

Solid wood Doors for Restrooms shall be Mahogany, first class and of good quality with at least a dimension of 0.8 x 2.1m complete with wall mounted door stopper.

SINGLE PANEL WOOD DOOR

Solid wood door with viewing glass for IP Office shall be Mahogany, first class and of good quality with at least a dimension of 0.8 x 2.1m complete with wall mounted door stopper.

MAGNETIC DOOR

The main door shall be double framed Magnetic Door with least dimension of 1.0 x 2.1m each. Complete with safety feature for intruders and of good quality to protect Fabrication Laboratory tools and equipment.

EMERGENCY EXIT DOOR

Two (2) swing-out emergency exit doors shall be provided at the opposite sides of the Fabrication Laboratory (near Woodworking area and Electronics workbenches leading to Science Research Facility and E-Learning and Multimedia Hub). One (1) exit door between Drafting Room and Design Studio leading to fire escape stairs. Fire escape stairs should be placed to give access for ease in evacuation. Door shall not be less than 2.1 meters high and 0.9 meters wide.

LOCKSET

The Contractor shall provide round type lockset for all doors. Submit brochure for approval.

All lockset for doors and windows shall be of good quality and heavy-duty.

WINDOWS

CASEMENT WINDOWS

Casement windows shall be installed in Fabrication Workspace, Display area, Drafting Room, Design Studio, and Intellectual Property Office. The contractor shall provide casement type for exterior windows that are wide enough to maximize natural lighting. The materials shall be 12 mm thick tempered clear glass mounted at a height of 0.70m



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for Fabrication Workspace and Display area. A mount height of 0.3m casement windows for Drafting room, Design Studio, and IP Office shall be provided.

SLIDING WINDOWS

Sliding windows shall be installed in Electronics and Digital Fabrication area. Materials shall be 12 mm thick tempered clear glass mounted at a height of 0.90m.

AWNING WINDOW

Awning windows shall be installed in all Male and Female Comfort Rooms. It shall be installed with complete accessories.

WINDOW GRILLS

Provide window grills for exterior windows.

BUILDING SIGNAGE

Provide stainless steel lettering of the word FABRICATION LABORATORY for the building signage with minimum dimension of 16". The contractor should provide the name of the building and PSHS logo appropriate with the stainless-steel lettering.

STAIRS

Stair shall be located between Prototyping and Woodworking area utilizing loft type of design and shall have a minimum dimension of 1.8 meters.

FLOOR FINISHES

RUBBERIZED FLOORING

Fabrication Workspace shall be slip-resistant, non-staining, non-permeable, and moisture proof. Rubberized flooring shall be provided in the following area: Woodworking area, Machining area, makerspace, storage area, and tool and die.

CERAMIC TILES

Ceramic Floor Tiles with dimensions of 600 mm x 600 mm x 10 mm thick shall be installed in Display area, Digital Fabrication area, Electronics area, and hallways. Provide glazed ceramic wall tiles and non-slip ceramic tiles for restroom floors. Submit brochure for design and tile color approval.

WALL TILES

Glazed Ceramic Wall Tiles with a dimension of at least 300 mm x 300 mm x 10 mm thick shall be installed from finish floor line up to 1.80 m of the Male and Female Rest Rooms.



CARPETED FLOOR TILES

Blue colored Carpeted Floor Tiles with dimensions of 300 mm x 300 mm x 10 mm thick shall be installed in Drafting Room, Design Studio, and IP Office. Submit brochure for design approval.

CONCRETE PAVEMENT

The Contractor shall include concrete pavement of 1.0 m from the building line.

CEILING

The Contractor shall provide:

- Ceiling for second floor and rest rooms shall be 6-mm thick marine plywood or fiber cement board. The contractor shall include ceiling works to the lobby, display area, fabrication workspace, comfort rooms, drafting room, Design studio, and IP Office.
- The vertical clearance from floor to ceiling shall be 3.3meters.
- Ceiling shall be painted in off-white finish, boysen paint or equivalent.

PLUMBING WORKS

The Contractor shall provide all plumbing devices necessary to make the system functional.

HANDWASHING

The Contractor shall design and provide two handwashing sinks with a mirror that fit with that of the lavatories size near the storage and woodworking area.

CUBICLE PARTITION

Toilet Cubicle Door with Partition shall be 12 mm thick compact laminated board complete with support and accessories. It shall have at least 2 cubicles fully furnished with toilet closet for both male and female, and provided with individual bidet. Color and design shall be subject for approval.

COMFORT ROOM FIXTURES AND ACCESSORIES

Comfort room for male scholars shall be placed near workshop area and electronics area at the right side of the building, while female populace on the left side. Comfort room shall have 2 cubicles fully furnished with toilet closet for both male and female and a separate hand washing area with 2 lavatories and urinal for male and 3 lavatories for female. A handwashing area with a lavatory, hand drier and a mirror that fit with that of the lavatories size. Comfort Room shall feature flush toilets faucets with bidet and complete accessories.



PAINT FINISH

The Contractor shall provide the following **flat or eggshell wall color finish** for each part of the fabrication laboratory:

Display Area	7.4 x 3.3m	Light Brown
Digital fabrication area		Yellow orange
Comfort room	3.0 x 3.3m	Royal Blue
Drafting room	12.0 x 3.3m	Gray
Fabrication Workspace		Cream
Ceiling		White

ELECTRICAL WORKS

The Contractor shall provide all electrical requirements to energize the Fabrication Laboratory from the tapping point. Provide underground electrical lines. Please coordinate with the Campus Resident Engineers and Architect as to the location of the electrical tapping point.

ELECTRICAL OUTLET

All rooms shall have adequate capacity for the operation of the emergency load when normal electric power supply is interrupted. The Contractor shall provide at least:

3 GFCI outlets-	For the Display area with 15-20 amperage capacity
30 GFCI outlets	Fabrication Workspace (Woodworking area, machining area, makerspace, storage area, electronics area, digital fabrication)
2 GFCI outlets for	Drafting Room and IP Office
3 GFCI outlets for	Design Studio

The following are power tools and equipment to be procured by the school in the future. The contractor should provide ample outlets to carry out the load capacity required by each component to avoid power interruption or technical glitches.

TOOLS AND EQUIPMENT	QTY	SIZES	AMPERAGE
Table Saw	1		15
Band Saw	1	29x28x77	1.25 hp
Planer	1	23x28x44 in	3hp
Jointer	1		
Drill Press	3	13.5x36.6x16.8 in	
Slot Mortiser	1	13.5 x 22 x 29 in	
Router Table	1	22.8x 18x 14.5in	120 volts
Disc Sander	1	22 x 11 x 12.5	
Wet Grinder	1	10x19x12.5 inch	1hp
Radial Arm Saw	1	2x23x18.5	15 amp
Lathe	4	57x31x28 in	230 volts
Scroll Saw	1	29.5x19.5x 12.1	120 volts
Wet and Dry Vacuum	1	18x22x17.5	135 watts



Milling Machine	1	37.5x30x45.5	
Dust Collector System	1		
Spray Booth	1	13.3x10.9x18.3	
Hot Wire Foam Cutters	1	17.3x4.5x13.2	
Heat Sealing Equipment	1		
Sheet Metal Brake/Slip Roller	1	39x26x16	
Digital Oscilloscope 2 Channels	4		
Variable DC Power Supply 30V	4		
DC Bench Power Supply	4		
Ink Jet- Versacamm Sp-540i	1	54 inches	5.5a
Plotter	2	38.9x20.9x11.2	
Sewing Machine	2		
3D Printer	4	11.8x11.8x11.8	450w
Mark Two	1	12.6x5.2x6.0 inches	
Metal X	1	12.6x5.2x6.0 inches	
Tormach 770M	1	14x7x13.25	1.5hp
Shopbot Desktop	1	24x18x3.5	15a
Prs Standard CNC	1	96x48x6	15a
Inkjet Printer/ Versacamm Vs-640i	1		5.5a
Vinyl Cutting Machine	2	24 inches	1.7a
Vinyl Cutting Plotter	1	52x196.85 inches	100va
508FS Machine	1	19x17 inches	3.2kw
Welding Machine			
Circular Saw			
Acrylic Bending Machine			
Digital Variable Triple Outputs Linear Type Dc Power Supply	4		

LIGHTING FIXTURES

Each room shall have at least 8 sets of LED surface-mounted for Lighting Fixtures. Submit product catalog and sample for approval.

All Lighting fixtures shall be LED type.

RAILINGS

The Contractor shall provide a combination of concrete railing with a minimum height of 1m and stainless-steel railings.

Stainless steel railings shall be used for stairs.



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RAMP

The Contractor shall provide access ramp for the mobility of handicapped or disabled persons and shall be given consideration in the design and construction of the school building.

FIRE DETECTION AND ALARM SYSTEM

The Contractor shall also include a functional fire detection and alarm system and other items such as fire extinguishers, fire alarm system smoke detectors, emergency lights, and other items necessary as per the allowed specifications and quantity per floor in the National Building Code and Bureau of Fire Protection requirement.

MECHANICAL WORKS

The contractor shall provide a complete design of Exhaust and Ventilation System for the Fabrication Laboratory. The design shall include all units and equipment compliant to the National Building Code.

EXHAUST SYSTEM

The contractor shall provide industrial grade exhaust system inclusive of pipes and fittings for passage of dust, fumes, and other exhausts gases to ensure proper ventilation

DUST COLLECTION SYSTEM

Provide a dust collector to enhance air quality released from industrial processes in the Fabrication Workspace. The contractor shall provide one unit of 3HP dust collector located strategically near the fire exit door with vent pipes mounted in concrete walls. It shall be installed with complete accessories.

AIR CONDITIONING UNIT

Air-conditioning units shall also be provided in all rooms at second floor except for Comfort rooms.

Provisions for air-conditioning units shall also be provided in all rooms at ground floor except for Comfort rooms. These provisions shall be integrated in the construction and shall only require the installation of indoor and outdoor air conditioning units when needed.

STAIRWAYS

The Contractor shall provide tile trims to all stairways.



IV. SELECTION OF DESIGN AND BUILD CONTRACTOR

The procurement and implementation of the project using the “Design and Build” scheme shall be in accordance with the provisions of RA 9184, specifically, its Annex G. Bidding shall be conducted by the Bids and Awards Committee (BAC) constituted to conduct the procurement of the project. The Campus Director of PSHS-CALABARZONRC will create the Design and Build Committee (DBC) and Technical Working Group (TWG), to be composed of highly technical personnel in the field of architecture and engineering/construction. The DBC and TWG shall prepare the design brief and performance specifications and parameters, review the detailed engineering design, and assist the BAC in the evaluation of technical proposals in accordance with the criteria set.

Eligibility Requirements

The eligibility requirements for Design and Build infrastructure projects shall comply with the applicable provisions of Section 23-24 of the IRR of RA9184.

a. Eligibility and Technical Documents

(a) Eligibility Documents – Class “A” Documents

- (i) PhilGEPS Certificate of Registration and Membership in accordance with Section 8.5.2 of the IRR, except for foreign bidders participating in the procurement by a Philippine Foreign Service Office or Post, which shall submit their eligibility documents under Section 23.1 of the IRR, provided, that the winning bidder shall register with the PhilGEPS in accordance with Section 37.1.4 of the IRR;

For purposes of determining the eligibility of bidders using the criteria stated in Section 23.4 of the IRR, only the following documents shall be required by the BAC, using the forms prescribed in the Bidding Documents:

- i) Registration certificate from SEC, Department of Trade and Industry (DTI) for sole proprietorship, or CDA for cooperatives.
- ii) Mayor’s/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. In cases of recently expired Mayor’s/Business permits, it shall be accepted together with the official receipt as proof that the bidder has applied for renewal within the period prescribed by the concerned local government unit, provided that the renewed permit shall be submitted as a post qualification requirement in accordance with Section 34.2 of this IRR.
- iii) Tax clearance per E.O. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).



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

Statement of the Bidder's SLCC similar to the contract to be bid, in accordance with ITB Clause 5.4.

The two statements required shall indicate for each contract the following:

- ii.1) name of the contract;
- ii.2) date of the contract;
- ii.3) contract duration;
- ii.4) owner's name and address;
- ii.5) nature of work;
- ii.6) contractor's role (whether sole contractor, subcontractor, or partner in a JV) and percentage of participation;
- ii.7) total contract value at award;
- ii.8) date of completion or estimated completion time;
- ii.9) total contract value at completion, if applicable;
- ii.10) percentages of planned and actual accomplishments, if applicable; and
- ii.11) value of outstanding works, if applicable.

The statement of the Bidder's SLCC shall be supported by the Notice of Award and/or Notice to Proceed, Project Owner's Certificate of Final Acceptance issued by the Owner other than the Contractor or the Constructors Performance Evaluation System (CPES) Final Rating, which must be at least satisfactory. In case of contracts with the private sector, an equivalent document shall be submitted;

- (iii) Unless otherwise provided in the BDS, a valid special PCAB License in case of joint ventures, and registration for the type and cost of the contract for this Project; and
- (iv) NFCC computation in accordance with ITB Clause 5.5.

Class "B" Documents

If applicable, Joint Venture Agreement (JVA) in accordance with RA 4566.

(b) Technical Documents

- (i) Bid security in accordance with **ITB** Clause 15. If the Bidder opts to submit the bid security in the form of:



- (i.1) a bank draft/guarantee or an irrevocable letter of credit issued by a foreign bank, it shall be accompanied by a confirmation from a Universal or Commercial Bank; or
 - (i.2) a surety bond accompanied by a certification coming from the Insurance Commission that the surety or insurance company is authorized to issue such instruments.
- (ii) Project Requirements, which shall include the following:
- (ii.1) Organizational chart for the contract to be bid;
 - (ii.2) List of contractor's personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data. These personnel must meet the required minimum years of experience set in the **BDS**; and
 - (ii.3) 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, which must meet the minimum requirements for the contract set in the **BDS**; and
 - (ii.4) Omnibus Sworn statement in accordance with Section 25.3 of the IRR of RA 9184 and using the form prescribed in Section IX. Bidding Forms.
 - (ii.5) Schematic documents. The schematic documents must be based on the approved design brief. The following shall be submitted on 20x30in boards using appropriate scale:
 - A. Three (3) perspective views (exterior) of the Fabrication Laboratory for the consideration of the PSHS-CALABARZONRC Management Committee (ManCom).
 - B. Floor Plans, two (2) sections and four (4) elevations
 - C. Perspective view with photorealistic representation
 - D. Site Development Plan
 - E. Engineering Plans, Layout and Schematic Diagram
 - F. Foundation Plan
 - G. Photo Realistic Representation of Building
 - (ii.6) Value engineering analysis of design and construction method. Prospective bidders shall prepare a value engineering analysis report of their proposed design and construction method to be applied for the PROJECT. Importance shall be made on the following criteria:
 - Cost-saving, measured on a per square meter average figure
 - Time-saving in design and construction duration
 - Operational efficiency to take advantage of natural lighting and ventilation in some areas and use of efficient toilet.



- (ii.7) Manpower Schedule
- (ii.8) Equipment Utilization Schedule
- (ii.9) Bar Chart and S-curve showing weekly accomplishment and cumulative percentage
- (ii.10) Construction Safety and Health Program received by DOLE for bidding purposes
- (ii.11) PERT-CPM

Financial Component

- i. Financial Bid in prescribed form
- ii. Bill of Quantities following the DPWH format
- iii. Detailed Cost Estimates following the DPWH format
- iv. Summary Sheet indicating the unit prices of materials, labor rates and equipment rental for the construction
- v. Payment schedule

Eligibility Criteria

- a) The eligibility of design and build contractors shall be based on the legal, technical and financial requirements above-mentioned. In the technical requirements, the design and build contractor (as solo or in joint venture/consortia) should be able to comply with the experience requirements under the IRR of RA 9184, where one of the parties (in a joint venture/consortia) should have at least one similar project, both in design and construction, with at least 50% of the cost of the Approved Budget for the Contract (ABC).
- b) If the bidder has no experience in design and build projects on its own, it may enter into subcontracting, partnerships or joint venture with design or engineering firms for the design portion of the contract.
- c) The relevant provisions under Section 23.5.2 of the IRR of RA 9184 on eligibility requirements shall be observed.

FOR DESIGN PERSONNEL

The key professionals and the respective qualifications of the DESIGN PERSONNEL shall be as follows:

A. DESIGN ARCHITECT

The Design Architect must be duly-licensed with at least five (5) years of experience in the design of residential, academic, or institutional facilities. The five-year experience as Junior Architect (apprentice) shall be counted.

B. STRUCTURAL ENGINEER



The Structural Engineer must be a duly-licensed Civil Engineer with at least five (5) years of experience in structural design of academic or institutional facilities.

C. PROFESSIONAL ELECTRICAL ENGINEER

The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years of experience. The 5-year experience as Registered Electrical Engineer shall be included in the computation of the 5-year experience.

D. PROFESSIONAL MECHANICAL ENGINEER

The Mechanical Engineer must be a duly-licensed Professional Mechanical Engineer with at least five (5) years of experience in HVAC and fire protection systems. The 5-year experience as Registered Mechanical Engineer shall be included in the computation of the 5-year experience.

E. SANITARY ENGINEER

The Sanitary Engineer must be duly-licensed with at least five (5) years of experience in the design of building water supply and distribution and plumbing.

The key professionals listed are required. The DESIGN & BUILD CONTRACTOR may, as needed and at its own expense, add additional professionals and/or support personnel for the optimal performance of all Architectural and Engineering Design Services, as stipulated in these Terms of Reference for the PROJECT. Prospective bidders shall attach each individual's resume and PRC license of the (professional) staff.

CONSTRUCTION PERSONNEL

The key professionals and the respective qualifications of the CONSTRUCTION PERSONNEL shall be as follows:

A. PROJECT MANAGER

The Project Manager shall be a licensed architect or engineer with at least five (5) years relevant experience on similar and comparable projects in different locations. The Project Manager should have a proven record of managerial capability through the directing/managing of major civil engineering works, including projects of a similar magnitude.

B. PROJECT ENGINEER/ARCHITECT

The Project Engineer/Architect shall be a licensed architect or engineer with at least five (5) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

C. MATERIALS ENGINEER



The Materials Engineer must be duly licensed and DPWH accredited with at least five (5) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

D. PROFESSIONAL ELECTRICAL ENGINEER

The Electrical Engineer must be a registered Professional Electrical Engineer with at least five (5) years of experience. The 5-year experience as Registered Electrical Engineer shall be included in the computation of the 5-year experience.

E. PROFESSIONAL MECHANICAL ENGINEER

The Mechanical Engineer must be a duly-licensed Professional Mechanical Engineer with at least five (5) years of experience in HVAC and fire protection systems. The 5 year experience as Registered Mechanical Engineer shall be included in the computation of the 5 year experience

F. SANITARY ENGINEER

The Sanitary Engineer must be duly-licensed with at least five (5) years of experience in similar and comparable projects in the installation of building water supply and distribution and plumbing.

G. CONSTRUCTION FOREMAN

The Foreman must have at least five (5) years of experience in similar and comparable projects.

H. SAFETY OFFICER

The safety officer must be an accredited safety practitioner by the Department of Labor and Employment (DOLE) and has undergone the prescribed 40-hour Construction Safety and Health Training (COSH).

The above key personnel listed are required. The DESIGN & BUILD CONTRACTOR may, as needed and at its own expense, add additional professionals and/or support personnel for the optimal performance of all Construction Services, as stipulated in these Terms of Reference, for the PROJECT. Prospective bidders shall attach each individual's resume and PRC license of the (professional) staff, proof of qualifications, and related documents as necessary.

V. PRELIMINARY DESIGN AND CONSTRUCTION STUDIES

No bidding and award of design and build contracts shall be made unless the required preliminary design and construction studies have been sufficiently carried out and duly approved by the Head of the Procuring Entity that shall include, among others, the following:

- i. Project Description
- ii. Conceptual Design
- iii. Performance Specifications and Parameters
- iv. Preliminary Survey and Mapping
- v. Preliminary Investigations



- vi. Utility Locations
- vii. Approved Budget for the Contract
- viii. Proposed Design and Construction Schedule
- ix. Minimum requirements for a Construction Safety and Health Program for the project being considered
- x. Tender/Bidding Documents, including Instructions to Bidders and Conditions of Contract

The above data are for reference only. The procuring entity does not guarantee that these data are fully correct, up to date, and applicable to the project at hand. The contractor is responsible for the accuracy and applicability of all data, including the above, that it will use in its design and build proposal and services.

The acquisition of right-of-way and the conduct of eminent domain proceedings shall still be the responsibility of the procuring entity, which shall include a preliminary budget for this purpose.

VI. DETAILED ENGINEERING REQUIREMENT

1. Upon award of the design and build contract, the winning bidder shall be responsible for the preparation and submission of all necessary detailed engineering investigations, surveys and designs in accordance with the provisions of Annex "A" of this IRR (with the exception of the Bidding Documents and the ABC).
2. The procuring entity shall ensure that all the necessary schedules with regard to the submission, confirmation and approval of the detailed engineering design and the details of the construction methods and procedures shall be included in the contract documents.
3. The procuring entity shall review, order rectification, and approve or disapprove – for implementation only - the submitted plans within these schedules. All instructions for rectification shall be in writing stating the reasons for such rectification. The design and build contractor shall be solely responsible for the integrity of the detailed engineering design and the performance of the structure irrespective of the approval/confirmation by the procuring entity.

VII. SCOPE OF WORKS AND PROJECT IMPLEMENTATION

A. Design

The Philippine Science High School - CALABARZON Region Campus, through the PSHS System Design and Build Committee for Design and Build Scheme, shall provide the design brief description of the project in accordance to RA9184 Annex G Sec. 11.

In compliance with the design and build Terms of Reference, the DESIGN AND BUILD CONTRACTOR shall submit a detailed program of work within fourteen (14) calendar days after the issuance of the Notice to Proceed for approval by the procuring entity that shall include, among others:



- a. The order in which it intends to carry out the work including anticipated timing for each stage of design/detailed engineering and construction;
- b. Periods for review of specific outputs and any other submissions and approvals;
- c. Sequence of timing for inspections and tests as specified in the contract documents;
- d. General description of the design and construction methods to be adopted;
- e. Number and names of personnel to be assigned for each stage of the work;
- f. List of equipment required on site for each major stage of the work;
- g. Description of the quality control system to be utilized for the project
- h. Provide geotechnical/soil investigation report which will serve as basis for the actual sizing of the column and foundation of the building.
- i. Prepare from the approved schematic design documents, the complete construction drawings and detailed technical specifications, cost estimates and the bill of quantities, setting forth in detail the work required for the architectural, structural, civil, landscape architecture, electrical, plumbing/sanitary, mechanical and other service- connected equipment, utilities, site planning aspects and related works, electronic and communications and the site development plan of the PROJECT's immediate environs.
- j. Prepare layouts, specifications and estimates of all furniture and equipment required for the fit-out of the buildings, specifically items that are owner-furnished materials.
- k. Prepare the scope of work for construction based on the prepared bill of quantities and cost estimates while fitting within the approved budget.
- l. Provide value engineering analysis on all prepared construction documents.
- m. Coordinate with all offices and agencies concerned, within and outside the Campus regarding utility connections, permits and other requirements needed.
- n. Periodically coordinate and present the status of the design phase to the Head of Procuring Entity and the PSHS Design & Build Committee.

All drawings included in the contract documents should be drawn using CAD software and plotted on 20" x 30" sheets. All other textual submittals shall be printed and ring-bound on A4-sized sheets.

Where required, design components shall be designed in coordination with the agencies concerned (e.g., coordinate with electric company for power lines and concerned company/agency for water and sewage lines).

Partial and earlier submission of the construction drawings, such as those affecting the preliminary stages of construction (site works, foundation works, etc.) shall be allowed. The DESIGN & BUILD CONTRACTOR may only proceed with the CONSTRUCTION PHASE after the approval of the HOPE of the drawings, designs and bill of estimates as recommended by



the Technical Working Group (TWG) and upon accomplishing all necessary PRE-CONSTRUCTION tasks.

B. Pre-Construction

- a. Secure all necessary building permits prior to construction. All incidental fees shall be included in the cost estimate of the building.
- b. Preparation of the PERT-CPM of the construction phase.
- c. Provide all other necessary documents that shall be required by B&D Committee

C. Construction Phase

- a. Implement all works indicated in the approved construction drawings and documents. All revisions and deviation from the approved plans, especially if it shall impact the overall cost of the project, shall be subject for approval.
- b. Provide soil filling, grading and other soil protection measures of the building and other elements of the site including soil and materials testing.
- c. Construct the buildings and other necessary structures, complete with utilities and finishes, resulting in operable and usable structures.
- d. Provide protection or relocation of existing trees indigenous to the area, and proper removal and replacement of all introduced trees and vegetation affected by the construction.
- e. Layout piping, conduits, manholes, boxes and other lines for utilities including tapping to existing utility lines. Facilitate the connection of all utilities (power, water, sewer, structured cabling and telephone) with their corresponding utility companies. All application fees shall be included in the project cost.
- f. Preparation of shop-drawings for approval.
- g. Coordinate with the B&D Committee regarding scheduling of delivery and installation of all owner-furnished materials and equipment during construction.
- h. Conduct all necessary tests (to be required by B&D Committee) and issue reports of results.
- i. Rectification of punch-listing works to be inspected and issued by the B&D Committee and/or the End-user.
- j. Provide all other necessary documents that shall be required by the B&D Committee.

D. Post Construction Phase

- a. Preparation of as-built plans
- b. Turn-over of all manuals, certificates and warranties of installed items.



E. Variation Orders

- a. Any errors, omissions, inconsistencies, inadequacies, or failure submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted, and reviewed at the contractor's cost. If the Contractor wishes to modify any design or document which has been previously submitted, reviewed, and approved, the contractor shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.
- b. As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:
 - i. Change Orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the contractor shall be implemented by the contractor at no additional cost to the procuring entity.
 - ii. Provided that the contractor suffers delay and/or incurs costs due to changes or errors in the procuring entity's performance specifications and parameters, he shall be entitled to either one of the following:
 - a. an extension of time for any such delays under Section 10 of Annex "E"; or
 - b. payment for such costs as specified in the contract documents, provided, that the cumulative amount of the variation order does not exceed ten percent (10%) of the original contract

F. DEFECTS AND LIABILITY

- A. All design and build projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Section 1723 of the New Civil Code of the Philippines.
- B. The contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty periods specified in Section 62.2.3.217 of the IRR.

VIII. OVERALL PROJECT TIME SCHEDULE

The DESIGN & BUILD CONTRACTOR shall propose the most reasonable time schedule for the completion of the project. It is expected that this period will not exceed **300 calendar days** from the date of the issuance of the Notice to Proceed (NTP): Forty-five (45) calendar days for the Design Phase and Two Hundred Fifty-five (255) calendar days for the Construction Phase.



IX. THE IMPLEMENTING AGENCY'S GENERAL RESPONSIBILITY

The implementing agency for the project is the Campus Director of PSHS-CALABARZONRC the B&D Committee shall:

- a) Prepare the design brief for the project in accordance with PSHS Systems' policies, existing codes, traditions, standards, and the conditions and design criteria enumerated in the Terms of Reference.
- b) Coordinate with DESIGN & BUILD CONTRACTOR and the Campus Director of PSHS-CALABARZONRC with regards to the design and implementation of the project.
- c) Assist in the coordination of the DESIGN & BUILD CONTRACTOR with various utility agencies during the detailed design and implementation phases of the project.
- d) Conducts regular coordination meetings between the DESIGN & BUILD CONTRACTOR and the end-user to facilitate the implementation of the project.

X. THE DESIGN & BUILD CONTRACTOR'S GENERAL RESPONSIBILITY

- a) The DESIGN & BUILD CONTRACTOR shall certify that he has, at his own expense, inspected and examined the proposed project site, its surroundings and existing infrastructure and facilities related to the execution of the work and has obtained all the pieces of information that are considered necessary for the proper execution of the work covered under these Terms of Reference.
- b) The DESIGN & BUILD CONTRACTOR shall ensure that all works at the stages of design, construction, restoration of affected areas, and testing and commissioning shall be carried out efficiently and effectively.
- c) The DESIGN & BUILD CONTRACTOR shall provide the school with complete reports such as technical analysis, maps and details regarding the existing conditions and proposed improvements within the site.
- d) The DESIGN & BUILD CONTRACTOR shall consider the academic calendar and critical dates and occasions within the School, in order to align his work schedule with the academic calendar of the school to avoid unnecessary disruption of school activities due to construction activities such as closure of water and power supply and non-usage of the existing roads.
- e) The DESIGN & BUILD CONTRACTOR shall inform the school of critical events during construction, especially when such events can potentially disrupt school activities.
- f) The DESIGN & BUILD CONTRACTOR shall be PCAB accredited and shall have a Construction Safety and Health Program and designed specifically for the CONSTRUCTION OF FABRICATION LABORATORY Utilizing the Design and Build Scheme.
- g) The DESIGN & BUILD CONTRACTOR will be held accountable for accidents that might occur during the execution of the project. The DESIGN & BUILD CONTRACTOR



is required to install warning signs and barriers for the safety of the general public and the avoidance of any accidents and provide appropriate and approved type personal protective equipment for their construction personnel.

- h) The DESIGN & BUILD CONTRACTOR shall be professionally liable for the design and shall submit a signed and sealed copy of the approved construction documents to form part of the Contract Documents.
- i) Only the plans approved by the Head of Procuring Entity (HOPE) shall be signed and sealed by the DESIGN & BUILD CONTRACTOR, and thereafter shall be the plans used for construction.
- j) All works designed and constructed should be guaranteed to seamlessly fit into the overall system general design standards of the PSHS System.

XI. PROJECTED SUBMITTALS DURING THE PROJECT

The following submittals and accomplished documents shall be duly completed and turned-over by the DESIGN & BUILD CONTRACTOR for the project:

A. FOR THE DESIGN PHASE

- a) Construction plans (signed and sealed) that include Architectural, Civil, Structural, Electrical, Structured Cabling, Mechanical, Fire Protection and Plumbing plans (12 sets hard copy and soft copy)
- b) Technical specifications (7 sets hard copy and soft copy)
- c) Detailed cost estimate (3 sets hard copy and soft copy)
- d) Bill of quantities (3 sets hard copy and soft copy)
- e) Site survey, topographic survey, survey of existing trees, geotechnical report including soil test and all other pertinent data related to the conditions of the project site
- f) Documents required for securing the Building Permit
- g) Drawings and reports that the B&D Committee may require for the periodic update concerning the status of the design phase.

B. FOR THE CONSTRUCTION PHASE

- a) As-built plans (hard copy and soft copy)
- b) All necessary permits (Fees shall be included in the contract)
- c) Shop drawings (hard copy and soft copy)
- d) PERT-CPM
- e) Test results
- f) Guarantees, warranties and other certificates
- g) Fire and Life Safety Assessment Report 2 and 3 (FALAR 2 and 3)
- h) Certificate of Occupancy
- i) All other necessary documents to be required by B&D Committee



XII. CODES AND STANDARDS

The project shall be designed, engineered, installed, tested, commissioned and handed over in conformity with the Building and Design Standards of the PSHS System and with the latest editions of the National Building Code of the Philippines, the National Structural Code of the Philippines, the Philippine Electrical Code, Philippine Mechanical Code, the National Plumbing Code of the Philippines, National Fire Code of the Philippines and other relevant codes and standards.

XIII. INSTALLATION AND WORKMANSHIP

Personnel of the DESIGN & BUILD CONTRACTOR should be specialists highly skilled in their respective trades, performing all labor according to first-class standards. A full-time Project Engineer/Architect and Construction Safety Engineer shall be assigned by the DESIGN & BUILD CONTRACTOR at the job site during the construction of the project.

All work to be subcontracted shall be declared by the DESIGN & BUILD CONTRACTOR and shall be approved by the Campus Director of PSHS-CALABARZONRC and its respective technical offices. Tapping for utilities such as power supply, water supply and sewage drainage shall be coordinated and all works involved, including access to utilities tapping point, excavation, removal of obstructions, concrete breaking, backfilling and restoration of affected areas, shall be coordinated and included in the scope of work and cost of the project.

Any errors, omissions, inconsistencies, inadequacies, or failure submitted by the DESIGN & BUILD CONTRACTOR that do not comply with the requirements shall be rectified, resubmitted, and reviewed at the DESIGN & BUILD CONTRACTOR'S cost. If the DESIGN & BUILD CONTRACTOR wishes to modify any design or document which has been previously submitted, reviewed, and approved, the DESIGN & BUILD CONTRACTOR shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.

XIV. MATERIALS

All materials and equipment shall be standard products of manufacturers engaged in the production of such materials and equipment and shall be the manufacturer's latest standard design.

The materials and workmanship supplied shall be of the best grade and constructed and / or installed in a practical and first-class manner. It will be completed in operation, nothing being omitted in the way of labor and materials required and it will be delivered and turned over in good condition, complete and perfect in every respect.

Materials and systems for structured cabling shall be in accordance with standards set by the PSHS System.

All materials shall be in conformance with the latest standards and with inspection and approval from B&D Committee.



XV. MODE OF PAYMENT

- a) The PSHS-CALABARZONRC shall pay the winning DESIGN & BUILD CONTRACTOR progress payments based on billings for actual works accomplished, as certified by B&D Committee of the PSHS System. In no case, shall progress billing be made more than once every thirty (30) calendar days. Materials or equipment delivered on the site but not completely put in place or used in the project shall not be included for payment.
- b) All progress payment shall be subject to retention of ten percent (10%) based on the amount due to the winning DESIGN & BUILD CONTRACTOR prior to any deduction. The total retention money shall be released only upon Final Acceptance of the Project. The winning DESIGN & BUILD CONTRACTOR may, however, request for its release prior to Final Acceptance subject to the guidelines set forth in R.A. 9184 and its Implementing Rules and Regulations.
- c) The DESIGN & BUILD CONTRACTOR may request in writing which must be submitted to form part of the Contract Documents, for an advanced payment equivalent to fifteen percent (15%) of the total Contract Price. The advance payment shall be made once the DESIGN & BUILD CONTRACTOR issues its irrevocable standby letter of credit from a reputable bank acceptable to the PSHS System, or GSIS Surety Bond of equivalent value, within fifteen (15) days from the signing of the Contract Agreement to cover said advanced payment.
- d) First Payment/Billing shall have an accomplishment of at least 20%. Succeeding billing and payment shall be made on a MONTHLY BASIS.
- e) The following documents must be submitted to the B&D Committee before processing of payments to the DESIGN & BUILD CONTRACTOR can be made:
 - i. Progress Billing
 - ii. Request for payment by the DESIGN & BUILD CONTRACTOR
 - iii. Pictures/photographs of original site conditions (for First Billing only)
 - iv. Pictures/photographs of work accomplished
 - v. Accomplishment Report
 - vi. Material Testing Results
 - vii. Payment of utilities (power and water consumption)
 - viii. DESIGN & BUILD CONTRACTOR's affidavit (if accomplishment is more than 60%)

Prepared by:


ERNIE V. ROA
End-User



Republic of the Philippines

DEPARTMENT OF SCIENCE AND TECHNOLOGY

PHILIPPINE SCIENCE HIGH SCHOOL - CALABARZON REGION CAMPUS



Certificate No.: SCP000240Q

Noted:

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BAC Chair

SARHA A. BAUTISTA
Vice-Chair

FRANCIS M. EMRALINO
Member

MA. THERESA P. PAGULAYAN
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Director III