



Republic of the Philippines  
**BULACAN STATE UNIVERSITY**  
City of Malolos, Bulacan

## INVITATION TO APPLY AND TO BID FOR THE Proposed BulSU Science Research and Learning Center (Infra-2015-18)

The **BULACAN STATE UNIVERSITY (BuSU)**, through its **Bids and Awards Committee (BAC)**, invites suppliers/manufacturers/distributors/contractors to apply for eligibility and to bid for the hereunder project:

Name of Project : Proposed BulSU Science Research and Learning Center  
Location : City of Malolos, Bulacan  
ABC : **Php. 22,366,914.64**  
Completion Date : One Hundred Fifty (150) Calendar Days

The prospective bidder must have an experience of having completed at least one (1) contract that is similar to the contract to be bid, and whose value, adjusted to current prices using the NSO consumer price indices, must be at least fifty per cent (50%) of the ABC to be bid: Provided, however, That contractors under Small A and Small B Categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than fifty per cent (50%) of the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB. The Eligibility Check/Screening as well as the Preliminary Examination of Bids shall use non-discretionary "pass/fail" criterion. Post-qualification of the lowest calculated bid shall be conducted.

All particulars relative to Eligibility Statement and Screening, Bid Security, Performance Security, Pre-Bidding Conference(s), Evaluation of Bids, Post-Qualification and Award of Contract shall be governed by the pertinent provisions of R.A. 9184 and its Implementing Rules and Regulations (IRR)

The schedule of activities is listed below:

Activities	Date/Time	Venue
1. Advertisement Period	<b>July 07, 2015</b>	PhilGEPS, BulSU Website, Newspaper and premises
2. Issuance of Bid Documents	<b>July 07, 2015</b>	Supply Office, CSSP Building, BulSU
3. Pre-bid Conference	<b>July 14, 2015 Tuesday, 9:00 am</b>	President's Boardroom, 2 <sup>nd</sup> Floor Flores Hall, BulSU
4. Deadline of Submission and Opening of Bids	<b>July 28, 2015 Tuesday, 9:00 am</b>	President's Boardroom, 2 <sup>nd</sup> Floor Flores Hall, BulSU

Bid Documents will be available only to prospective bidders upon payment of a non-refundable amount of **TWENTY TWO THOUSAND PESOS ONLY (P 22,000.00)** to the Bulacan State University Cashier, City of Malolos, Bulacan.

Submission of Letter of Intent (LOI) is per package and should bring the following: Original and photocopy of PCAB License and Certificate of Phil-GEPS Registration. Upon submission of Letter of Intent (LOI) and The Bulacan State University assumes no responsibility whatsoever to compensate or indemnify bidders for any expenses incurred in the preparation of the bid. Moreover, the Bulacan State University reserves the right to reject any or all bid proposal at any time prior to contract award, declare the bidding a failure, or award the contract to the bidder whose offer is the most responsive, lowest calculated bid, and most advantageous to the government.

For further information, please refer to:  
*Bulacan State University-BAC Secretariat*  
*Guinhawa, City of Malolos, 3000 Bulacan*  
*Telefax. No. (044) 794-7755 ; (044)919-7800 to 99 loc 1053*  
*Email Address: bulsu\_bacsecretariat@ymail.com*

**DANILO S. HILARIO, Ed.D.**  
*BAC Chairman*



## **INVITATION TO BID FOR THE Proposed BulSU Science Research and Learning Center (Infra-2015-18)**

The **BULACAN STATE UNIVERSITY (BuSU)**, through the **General Fund** intends to apply the sum of **Twenty Two Million Three Hundred Sixty Six Thousand Nine Hundred Fourteen Pesos and 64/100 (Php. 22,366,914.64)** being the Approved Budget for the Contract (ABC) to payments under the contract for **Proposed BulSU Science Research and Learning Center (Infra-2015-18)**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

The **Bulacan State University** now invites bids for the **Proposed BulSU Science Research and Learning Center (Infra-2015-18)**. Completion of the Works is required **One Hundred Fifty (150) calendar days upon receipt of Notice to Proceed**. The bidder must have an experience of having completed at least one (1) contract that is similar to the contract to be bid, and whose value, adjusted to current prices using the NSO consumer price indices, must be at least fifty per cent (50%) of the ABC to be bid: Provided, however, That contractors under Small A and Small B Categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than fifty per cent (50%) of the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB. The description of an eligible bidder is contained in the Bidding Documents, particularly in Section II. Instructions to Bidders.

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

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

A complete set of Bidding Documents may be purchased by interested Bidders from the address below and upon payment of a non-refundable fee for the Bidding Documents in the amount of **Twenty Two Thousand Pesos Only (Php. 22, 000.00)**.

It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the **Bulacan State University**, provided that bidders shall pay the fee for the Bidding Documents not later than the submission of their bids.

The **Bulacan State University** will hold a **Pre-Bid Conference** on **July 14, 2015 (Tuesday), 9:00 a.m.** at the **President's Boardroom, 2<sup>nd</sup> Floor Flores Hall, Bulacan State University, Guinhawa, City of Malolos 3000 Bulacan**, which shall be open only to all interested parties who have purchased the Bidding Documents.

Bids must be delivered to the address below on or before **July 28, 2015 (Tuesday), 9:00 a.m. at the President's Boardroom, 2<sup>nd</sup> Floor Flores Hall, Bulacan State University**,

**Guinhawa, City of Malolos, 3000 Bulacan.** All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 18.

Bids will be opened in the presence of the bidders' representatives who choose to attend at the address below. Late bids shall not be accepted.

The **Bulacan State University** reserves the right to accept or reject any bid, to annul the bidding process, and to reject all bids at any time prior to contract award, without thereby incurring any liability to the affected bidder or bidders.

For further information, please refer to:

**CATHERINE B. PULUMBARIT**

*BAC Secretariat*

Bulacan State University

Guinhawa, City of Malolos, 3000 Bulacan

Tele fax no.: (044) 794-7755 / (044) 919-7800 loc 1053 or 1054

Email address: bulsu\_bacsecretariat@ymail.com

**DANILO S. HILARIO, Ed. D.**

*BAC Chairman*

## **A. General**

### **1. Scope of Bid**

1.1 The "BULACAN STATE UNIVERSITY" as defined in the **BDS**, invites bids for the construction of Works, as described in Section VI. Specifications. The name and identification number of the Contract is provided in the **BDS**.

1.2 The successful bidder will be expected to complete the Works by the intended completion date specified in SCC Clause 1.16.

### **2. Source of Funds**

The BULACAN STATE UNIVERSITY has a budget or has applied for or received funds from the Funding Source named in the **BDS**, and in the amount indicated in the **BDS**. It intends to apply part of the funds received for the Project, as defined in the **BDS**, to cover eligible payments under the Contract for the Works.

### **3. Corrupt, Fraudulent, Collusive, and Coercive Practices**

3.1. Unless otherwise specified in the BDS, the BULACAN STATE UNIVERSITY, as well as bidders and contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. In pursuance of this policy, the Funding Source:

- (a) defines, for purposes of this provision, the terms set forth below as follows:
  - (i) **"corrupt practice"** means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves, others, or induce others to do so, by misusing the position in which they are placed, and includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; entering, on behalf of the BULACAN STATE UNIVERSITY, into any contract or transaction manifestly and grossly disadvantageous to the same, whether or not the public officer profited or will profit thereby, and similar acts as provided in Republic Act 3019;
  - (ii) **"fraudulent practice"** means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the BULACAN STATE UNIVERSITY, and includes collusive practices among Bidders (prior to or after Bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the BULACAN STATE UNIVERSITY of the benefits of free and open competition;
  - (iii) **"collusive practice"** means a scheme or arrangement between two or more bidders, with or without the knowledge of the BULACAN STATE UNIVERSITY, designed to establish bid prices at artificial, non-competitive levels; and

- (iv) **“coercive practice”** means harming or threatening to harm, directly or indirectly, persons, or their property to influence their participation in a procurement process, or affect the execution of a contract;
  - (v) **“obstructive practice”** is
    - (aa) deliberately destroying, falsifying, altering or concealing of evidence material to an administrative proceedings or investigation or making false statements to investigators in order to materially impede an administrative proceedings or investigation of the BULACAN STATE UNIVERSITY or any foreign government/foreign or international financing institution into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the administrative proceedings or investigation or from pursuing such proceedings or investigation; or
    - (bb) acts intended to materially impede the exercise of the inspection and audit rights of the BULACAN STATE UNIVERSITY or any foreign government/foreign or international financing institution herein.
  - (b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract; and
  - (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded Contract funded by the Funding Source if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing or, or in executing, a Contract funded by the Funding Source.
- 3.2. Further, the BULACAN STATE UNIVERSITY will seek to impose the maximum civil, administrative, and/or criminal penalties available under the applicable laws on individuals and organizations deemed to be involved in any of the practices mentioned in **ITB** Clause 3.1(a).
- 3.3. Furthermore, the Funding Source and the BULACAN STATE UNIVERSITY reserve the right to inspect and audit records and accounts of a contractor in the bidding for and performance of a contract themselves or through independent auditors as reflected in the **GCC** Clause 34.

#### **4. Conflict of Interest**

- 4.1. All bidders found to have conflicting interests shall be disqualified to participate in the procurement at hand, without prejudice to the imposition of appropriate administrative, civil, and criminal sanctions. A Bidder may be considered to have conflicting interests with another Bidder in any of the events described in paragraphs (a) through (c) and a general conflict of

interest in any of the circumstances set out in paragraphs (d) through (g) below:

- (a) A Bidder has controlling shareholders in common with another Bidder;
- (b) A Bidder receives or has received any direct or indirect subsidy from any other Bidder;
- (c) A Bidder has the same legal representative as that of another Bidder for purposes of this Bid;
- (d) A Bidder has a relationship, directly or through third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder or influence the decisions of the BULACAN STATE UNIVERSITY regarding this bidding process. This will include a firm or an organization who lends, or temporarily seconds, its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for or implementation of the project if the personnel would be involved in any capacity on the same project;
- (e) A Bidder submits more than one bid in this bidding process. However, this does not limit the participation of subcontractors in more than one bid;
- (f) A Bidder who participated as a consultant in the preparation of the design or technical specifications of the goods and related services that are the subject of the bid; or
- (g) A Bidder who lends, or temporary seconds, its personnel to firms or organizations which are engaged in consulting services for the preparation related to procurement for or implementation of the project, if the personnel would be involved in any capacity on the same project.

4.2. In accordance with Section 47 of the IRR of RA 9184, all Bidding Documents shall be accompanied by a sworn affidavit of the Bidder that it is not related to the Head of the BULACAN STATE UNIVERSITY, members of the Bids and Awards Committee (BAC), members of the Technical Working Group (TWG), members of the BAC Secretariat, the head of the Project Management Office (PMO) or the end-user unit, and the project consultants, by consanguinity or affinity up to the third civil degree. On the part of the bidder, this Clause shall apply to the following persons:

- (a) If the Bidder is an individual or a sole proprietorship, to the Bidder himself;
- (b) If the Bidder is a partnership, to all its officers and members;
- (c) If the Bidder is a corporation, to all its officers, directors, and controlling stockholders; and

- (d) If the Bidder is a joint venture (JV), the provisions of items (a), (b), or (c) of this Clause shall correspondingly apply to each of the members of the said JV, as may be appropriate.

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

## **5. Eligible Bidders**

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

- (a) Duly licensed Filipino citizens/sole proprietorships;
- (b) Partnerships duly organized under the laws of the Philippines and of which at least seventy five percent (75%) of the interest belongs to citizens of the Philippines;
- (c) Corporations duly organized under the laws of the Philippines, and of which at least seventy five percent (75%) of the outstanding capital stock belongs to citizens of the Philippines;
- (d) Cooperatives duly organized under the laws of the Philippines, and of which at least seventy five percent (75%) of the interest belongs to citizens of the Philippines; and
- (e) Persons/entities forming themselves into a JV, i.e., a group of two (2) or more persons/entities that intend to be jointly and severally responsible or liable for a particular contract: Provided, however, that, in accordance with Letter of Instructions No. 630, Filipino ownership or interest of the joint venture concerned shall be at least seventy five percent (75%): Provided, further, that joint ventures in which Filipino ownership or interest is less than seventy five percent (75%) may be eligible where the structures to be built require the application of techniques and/or technologies which are not adequately possessed by a person/entity meeting the seventy five percent (75%) Filipino ownership requirement: Provided, finally, that in the latter case, Filipino ownership or interest shall not be less than twenty five percent (25%). For this purpose Filipino ownership or interest shall be based on the contributions of each of the members of the joint venture as specified in their JVA.

5.2. The BULACAN STATE UNIVERSITY may also invite foreign bidders when provided for under any Treaty or International or Executive Agreement as specified in the **BDS**.

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

5.4. (a) Unless otherwise provided in the **BDS**, the Bidder must have completed, within ten (10) years from the submission of bids, a single contract that is

similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted to current prices using the National Statistics Office consumer price index.

(b) For Foreign-funded Procurement, the BULACAN STATE UNIVERSITY and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the **BDS**.

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

- 5.5. The Bidder must submit a computation of its Net Financial Contracting Capacity (NFCC) which must be at least equal to the ABC to be bid, calculated as follows:

NFCC = [(Current assets minus current liabilities) (K)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started coinciding with the contract for this Project.

Where:

K = 10 for a contract duration of one year or less, 15 for a contract duration of more than one year up to two years, and 20 for a contract duration of more than two years.

The values of the bidder's current assets and current liabilities shall be based on the data submitted to the BIR, through its Electronic Filing and Payment System (EFPS).

## **6. Bidder's Responsibilities**

- 6.1. The Bidder or its duly authorized representative shall submit a sworn statement in the form prescribed in Section IX. Bidding Forms as required in **ITB** Clause 12.1(b)(iii).
- 6.2. The Bidder is responsible for the following:
- (a) Having taken steps to carefully examine all of the Bidding Documents;
  - (b) Having acknowledged all conditions, local or otherwise, affecting the implementation of the contract;
  - (c) Having made an estimate of the facilities available and needed for the contract to be bid, if any;
  - (d) Having complied with its responsibility to inquire or secure Supplemental/Bid Bulletin/s as provided under **ITB** Clause 10.3.
  - (e) Ensuring that it is not "blacklisted" or barred from bidding by the GOP or any of its agencies, offices, corporations, or LGUs, including foreign



government/foreign or international financing institution whose blacklisting rules have been recognized by the GPPB;

- (f) Ensuring that each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;
  - (g) Authorizing the Head of the BULACAN STATE UNIVERSITY or its duly authorized representative/s to verify all the documents submitted;
  - (h) Ensuring that the signatory is the duly authorized representative of the Bidder, and granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the Bidder in the bidding, with the duly notarized Secretary's Certificate attesting to such fact, if the Bidder is a corporation, partnership, cooperative, or joint venture;
  - (i) Complying with the disclosure provision under Section 47 of the Act in relation to other provisions of Republic Act 3019; and
  - (j) Complying with existing labor laws and standards, if applicable. Failure to observe any of the above responsibilities shall be at the risk of the Bidder concerned.
- 6.3. The Bidder, by the act of submitting its bid, shall be deemed to have inspected the site, determined the general characteristics of the contract works and the conditions for this Project and examine all instructions, forms, terms, and project requirements in the Bidding Documents.
- 6.4. It shall be the sole responsibility of the prospective bidder to determine and to satisfy itself by such means as it considers necessary or desirable as to all matters pertaining to this Project, including: (a) the location and the nature of the contract, project, or work; (b) climatic conditions; (c) transportation facilities; (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.
- 6.5. The BULACAN STATE UNIVERSITY shall not assume any responsibility regarding erroneous interpretations or conclusions by the prospective or eligible bidder out of the data furnished by the BULACAN STATE UNIVERSITY.
- 6.6. Before submitting their bids, the Bidders are deemed to have become familiar with all existing laws, decrees, ordinances, acts and regulations of the Philippines which may affect the contract in any way.
- 6.7. The Bidder shall bear all costs associated with the preparation and submission of his bid, and the BULACAN STATE UNIVERSITY will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

- 6.8. Bidders should note that the BULACAN STATE UNIVERSITY will only accept bids only from those that have paid the nonrefundable fee for the Bidding Documents at the office indicated in the Invitation to Bid.

## **7. Origin of GOODS and Services**

There is no restriction on the origin of Goods, or Contracting of Works or Services other than those prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

## **8. Subcontracts**

- 8.1. Unless otherwise specified in the **BDS**, the Bidder may subcontract portions of the Works to an extent as may be approved by the BULACAN STATE UNIVERSITY and stated in the **BDS**. However, subcontracting of any portion shall not relieve the Bidder from any liability or obligation that may arise from the contract for this Project.
- 8.2. Subcontractors must submit the documentary requirements under **ITB** Clause 12 and comply with the eligibility criteria specified in the **BDS**. In the event that any subcontractor is found by the BULACAN STATE UNIVERSITY to be ineligible, the subcontracting of such portion of the Works shall be disallowed.
- 8.3. The Bidder may identify the subcontractor to whom a portion of the Works will be subcontracted at any stage of the bidding process or during contract implementation. If the Bidder opts to disclose the name of the subcontractor during bid submission, the Bidder shall include the required documents as part of the technical component of its bid.

## **B. Contents of Bidding Documents**

## **9. Pre-Bid Conference**

- 9.1. (a) If so specified in the **BDS**, a pre-bid conference shall be held at the venue and on the date indicated therein, to clarify and address the Bidders' questions on the technical and financial components of this Project.
- (b) *The pre-bid conference shall be held at least twelve (12) calendar days before the deadline for the submission of and receipt of bids. If the BULACAN STATE UNIVERSITY determines that, by reason of the method, nature, or complexity of the contract to be bid, or when international participation will be more advantageous to the GOP, a longer period for the preparation of bids is necessary, the pre-bid conference shall be held at least thirty (30) calendar days before the deadline for the submission and receipt of bids, as specified in the **BDS**.*
- 9.2. Bidders are encouraged to attend the pre-bid conference to ensure that they fully understand the BULACAN STATE UNIVERSITY's requirements. Non-attendance of the Bidder will in no way prejudice its bid; however, the Bidder is expected to know the changes and/or amendments to the Bidding Documents as recorded in the minutes of the pre-bid conference and the Supplemental/Bid Bulletin.

- 9.3. Any statement made at the pre-bid conference shall not modify the terms of the bidding documents unless such statement is specifically identified in writing as an amendment thereto and issued as a Supplemental/Bid Bulletin.

## **10. Clarification and Amendment of Bidding Documents**

- 10.1. Bidders who have purchased the Bidding Documents may request for clarification(s) on any part of the Bidding Documents or for an interpretation. Such a request must be in writing and submitted to the BULACAN STATE UNIVERSITY at the address indicated in the **BDS** at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.
- 10.2. Supplemental/Bid Bulletins may be issued upon the BULACAN STATE UNIVERSITY's initiative for purposes of clarifying or modifying any provision of the Bidding Documents not later than seven (7) calendar days before the deadline for the submission and receipt of Bids. Any modification to the Bidding Documents shall be identified as an amendment.
- 10.3. Any Supplemental/Bid Bulletin issued by the BAC shall also be posted on the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the BULACAN STATE UNIVERSITY concerned, if available. Unless, otherwise provided in the **BDS**, it shall be the responsibility of all Bidders who secure the Bidding Documents to inquire and secure Supplemental/Bid Bulletins that may be issued by the BAC. However, bidders who have submitted bids before the issuance of the Supplemental/Bid Bulletin must be informed and allowed to modify or withdraw their bids in accordance with **ITB** Clause 23.

### **C. Preparation of Bids**

## **11. Language of Bids**

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

## **12. Documents Comprising the Bid: Eligibility and Technical Components**

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

### **(a) Eligibility Documents –**

#### **Class "A" Documents:**

- (i) Registration certificate from the Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives, or any proof of such registration as stated in the **BDS**;

- (ii) Mayor's permit issued by the city or municipality where the principal place of business of the prospective bidder is located;
- (iii) The prospective bidder must have an experience of having completed at least one (1) contract that is similar to the contract to be bid, and whose value, adjusted to current prices using the NSO consumer price indices, must be at least fifty per cent (50%) of the ABC to be bid: *Provided, however,* That contractors under Small A and Small B Categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than fifty per cent (50%) of the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB.

For Foreign-funded Procurement, the GOP and foreign government/ foreign or international financing institution may agree on another track record requirement.

Moreover, a contract shall be considered "similar" to the contract to be bid if it has the same major categories of work.

The statement shall include, for each contract, the following:

- (iii.1) name of the contract;
- (iii.2) date of the contract;
- (iii.3) contract duration;
- (iii.4) owner's name and address;
- (iii.5) nature of work;
- (iii.6) contractor's role (whether sole contractor, subcontractor, or partner in a JV) and percentage of participation;
- (iii.7) total contract value at award;
- (iii.8) date of completion or estimated completion time;
- (iii.9) total contract value at completion, if applicable;
- (iii.10) percentages of planned and actual accomplishments, if applicable;
- (iii.11) value of outstanding works, if applicable;
- (iii.12) the statement shall be supported by the notices of award and/or notices to proceed issued by the owners; and

(iii.13) the statement shall be supported by the Owner's Certificate of Final Acceptance; or the Constructors Performance Evaluation Summary (CPES) Final Rating and/or the Certificate of Completion, must be satisfactory.

- (iv) Unless otherwise provided in the **BDS**, valid Philippine Contractors Accreditation Board (PCAB) license and registration for the type and cost of the contract for this Project;
- (v) Audited financial statements, showing, among others, the prospective total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission;
- (vi) NFCC computation in accordance with ITB Clause 5.5;
- (vii) Tax clearance per Executive Order 398, Series of 2005, as finally reviewed and approved by the BIR; and

**Class "B" Document:**

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

**(b) Technical Documents –**

- (i) Bid security in accordance with ITB Clause 18. If the Bidder opts to submit the bid security in the form of:
  - (i.1) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.
  - (i.2) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.
  - (i.3) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or
  - (i.4) Any combination of items (i.1) to (i.3) above.
  - (i.5) Bid-Securing Declaration
- (ii) Project Requirements, which shall include the following:

- (ii.1) Organizational chart for the contract to be bid;
- (ii.2) List of contractor's personnel (*viz*, project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data; and
- (ii.3) List of contractor's equipment units, which are owned, leased, and/or under purchase agreements, supported by certification of availability of equipment from the equipment lessor/vendor for the duration of the project; and
- (iii) Sworn statement in accordance with Section 25.2(b) (iv) of the IRR of RA 9184 and using the form prescribed in Section IX. Bidding Forms.

### **13. Documents Comprising the Bid: Financial Component**

- 13.1. Unless otherwise stated in the **BDS**, the financial component of the bid shall contain the following:
- (a) Financial Bid Form in accordance with the form prescribed in Section IX. Bidding Forms; and
  - (b) Any other document related to the financial component of the bid as stated in the **BDS**.
- 13.2. (a) Unless indicated in the **BDS**, all Bids that exceed the ABC shall not be accepted.
- (b) Unless otherwise indicated in the **BDS**, for foreign-funded procurement, a ceiling may be applied to bid prices provided the following conditions are met:
- (i) Bidding Documents are obtainable free of charge on a freely accessible website. If payment of Bidding Documents is required by the BULACAN STATE UNIVERSITY, payment could be made upon the submission of bids.
  - (ii) The BULACAN STATE UNIVERSITY has procedures in place to ensure that the ABC is based on recent estimates made by the engineer or the responsible unit of the procuring entity and that the estimates are based on adequate detailed engineering (in the case of works) and reflect the quality, supervision and risk and inflationary factors, as well as prevailing market prices, associated with the types of works or goods to be procured.
  - (iii) The BULACAN STATE UNIVERSITY has trained cost estimators on estimating prices and analyzing bid variances. In the case of infrastructure projects, the BULACAN STATE UNIVERSITY must also have trained quantity surveyors.

- (iv) The BULACAN STATE UNIVERSITY has established a system to monitor and report bid prices relative to ABC and engineer's/BULACAN STATE UNIVERSITY's estimate.
- (v) The BULACAN STATE UNIVERSITY has established a monitoring and evaluation system for contract implementation to provide a feedback on actual total costs of goods and works.

#### **14. Alternative Bids**

- 14.1. Alternative Bids shall be rejected. For this purpose, alternative bid is an offer made by a Bidder in addition or as a substitute to its original bid which may be included as part of its original bid or submitted separately therewith for purposes of bidding. A bid with options is considered an alternative bid regardless of whether said bid proposal is contained in a single envelope or submitted in two (2) or more separate bid envelopes.
- 14.2. Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative bids shall not be accepted.
- 14.3. Each Bidder shall submit only one Bid, either individually or as a partner in a JV. A Bidder who submits or participates in more than one bid (other than as a subcontractor if a subcontractor is permitted to participate in more than one bid) will cause all the proposals with the Bidder's participation to be disqualified. This shall be without prejudice to any applicable criminal, civil and administrative penalties that may be imposed upon the persons and entities concerned.

#### **15. Bid Prices**

- 15.1. The contract shall be for the whole Works, as described in **ITB** Clause 1.1, based on the priced Bill of Quantities submitted by the Bidder.
- 15.2. The Bidder shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Bids not addressing or providing all of the required items in the Bidding Documents including, where applicable, bill of quantities, shall be considered non-responsive and, thus, automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a "0" (zero) for the said item would mean that it is being offered for free to the Government.
- 15.3. All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, prior to the deadline for submission of bids, shall be included in the rates, prices, and total bid price submitted by the Bidder.
- 15.4. All bid prices for the given scope of work in the contract as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as specified in GCC Clause 48. Price escalation may be allowed in extraordinary circumstances as may be determined by the National Economic and Development Authority in accordance with the Civil Code of the Philippines,

and upon the recommendation of the BULACAN STATE UNIVERSITY. Furthermore, in cases where the cost of the awarded contract is affected by any applicable new laws, ordinances, regulations, or other acts of the GOP, promulgated after the date of bid opening, a contract price adjustment shall be made or appropriate relief shall be applied on a no loss-no gain basis.

#### **16. Bid Currencies**

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

#### **17. Bid Validity**

- 17.1. Bids shall remain valid for the period specified in the **BDS** which shall not exceed one hundred twenty (120) calendar days from the date of the opening of bids.
- 17.2. In exceptional circumstances, prior to the expiration of the bid validity period, the BULACAN STATE UNIVERSITY may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. The bid security described in **ITB** Clause 0 should also be extended corresponding to the extension of the bid validity period at the least. A Bidder may refuse the request without forfeiting its bid security, but his bid shall no longer be considered for further evaluation and award. A Bidder granting the request shall not be required or permitted to modify its bid.

#### **18. Bid Security**

- 18.1. The bid security in the amount stated in the BDS shall be equal to the percentage of the ABC in accordance with the following schedule:

Form of Bid Security	Amount of Bid Security (Equal to Percentage of the ABC)
(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Two percent (2%)



(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	Five percent (5%)
(d) Any combination of items (a) to (c) above.	Proportionate to share of form with respect to total amount of security
(e) Bid Securing Declaration	No percentage required

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

- 18.2. The bid security should be valid for the period specified in the **BDS**. Any bid not accompanied by an acceptable bid security shall be rejected by the BULACAN STATE UNIVERSITY as non-responsive.
- 18.3. No bid securities shall be returned to bidders after the opening of bids and before contract signing, except to those that failed or declared as post-disqualified, upon submission of a written waiver of their right to file a motion for reconsideration and/or protest. Without prejudice on its forfeiture, Bid Securities shall be returned only after the bidder with the Lowest Calculated Responsive Bid has signed the contract and furnished the Performance Security, but in no case later than the expiration of the Bid Security validity period indicated in **ITB Clause 18.2**.
- 18.4. Upon signing and execution of the contract, pursuant to **ITB Clause 31**, and the posting of the performance security, pursuant to **ITB Clause 32**, the successful Bidder's Bid security will be discharged, but in no case later than the Bid security validity period as indicated in **ITB Clause 18.2**.
- 18.5. The bid security may be forfeited:
  - (a) if a Bidder:
    - (i) withdraws its bid during the period of bid validity specified in **ITB Clause 17**;
    - (ii) does not accept the correction of errors pursuant to **ITB Clause 27.3(b)**;

- (iii) fails to submit the requirements within the prescribed period, or a finding against their veracity, as stated in ITB Clause 28.2;
  - (iv) submission of eligibility requirements containing false information or falsified documents;
  - (v) submission of bids that contain false information or falsified documents, or the concealment of such information in the bids in order to influence the outcome of eligibility screening or any other stage of the public bidding;
  - (vi) allowing the use of one's name, or using the name of another for purposes of public bidding;
  - (vii) withdrawal of a bid, or refusal to accept an award, or enter into contract with the Government without justifiable cause, after the Bidder had been adjudged as having submitted the Lowest Calculated and Responsive Bid;
  - (viii) refusal or failure to post the required performance security within the prescribed time;
  - (ix) refusal to clarify or validate in writing its bid during post-qualification within a period of seven (7) calendar days from receipt of the request for clarification;
  - (x) any documented attempt by a bidder to unduly influence the outcome of the bidding in his favor;
  - (xi) failure of the potential joint venture partners to enter into the joint venture after the bid is declared successful; or
  - (xii) all other acts that tend to defeat the purpose of the competitive bidding, such as habitually withdrawing from bidding, submitting late Bids or patently insufficient bid, for at least three (3) times within a year, except for valid reasons.
- (b) if the successful Bidder:
- (i) fails to sign the contract in accordance with **ITB** Clause 31;
  - (ii) fails to furnish performance security in accordance with **ITB** Clause 32.

## **19. Format and Signing of Bids**

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

- 19.2. Forms as mentioned in **ITB** Clause 19.1 must be completed without any alterations to their format, and no substitute form shall be accepted. All blank spaces shall be filled in with the information requested.
- 19.3. The Bidder shall prepare an original of the first and second envelopes as described in **ITB** Clauses 12 and 13. In addition, the Bidder shall submit copies of the first and second envelopes. In the event of any discrepancy between the original and the copies, the original shall prevail.
- 19.4. The bid, except for unamended printed literature, shall be signed, and each and every page thereof shall be initialed, by the duly authorized representative/s of the Bidder.
- 19.5. Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the duly authorized representative/s of the Bidder.

## **20. Sealing and Marking of Bids**

- 20.1. Bidders shall enclose their original eligibility and technical documents described in **ITB** Clause 12, in one sealed envelope marked "**ORIGINAL - TECHNICAL COMPONENT**", and the original of their financial component in another sealed envelope marked "**ORIGINAL - FINANCIAL COMPONENT**", sealing them all in an outer envelope marked "**ORIGINAL BID**".
- 20.2. Each copy of the first and second envelopes shall be similarly sealed duly marking the inner envelopes as "**COPY NO. \_\_\_\_ - TECHNICAL COMPONENT**" and "**COPY NO. \_\_\_\_ - FINANCIAL COMPONENT**" and the outer envelope as "**COPY NO. \_\_\_\_**", respectively. **These envelopes containing the original and the copies shall then be enclosed in one single envelope.**
- 20.3. The original and the number of copies of the Bid as indicated in the **BDS** shall be typed or written in indelible ink and shall be signed by the bidder or its duly authorized representative/s.
- 20.4. All envelopes shall:
  - (a) contain the name of the contract to be bid in capital letters;
  - (b) bear the name and address of the Bidder in capital letters;
  - (c) be addressed to the BULACAN STATE UNIVERSITY's BAC identified in **ITB** Clause 10.1;
  - (d) bear the specific identification of this bidding process indicated in the Invitation to Bid; and
  - (e) bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of bids, in accordance with **ITB** Clause 21.
- 20.5. If bids are not sealed and marked as required, the BULACAN STATE UNIVERSITY will assume no responsibility for the misplacement or premature opening of the bid.

## **D. Submission and Opening of Bids**

### **21. Deadline for Submission of Bids**

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

### **22. Late Bids**

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

### **23. Modification and Withdrawal of Bids**

23.1. The Bidder may modify its bid after it has been submitted; provided that the modification is received by the BULACAN STATE UNIVERSITY prior to the deadline prescribed for submission and receipt of bids. The Bidder shall not be allowed to retrieve its original bid, but shall be allowed to submit another bid equally sealed, properly identified, linked to its original bid marked as "TECHNICAL MODIFICATION" or "FINANCIAL MODIFICATION" and stamped "received" by the BAC. Bid modifications received after the applicable deadline shall not be considered and shall be returned to the Bidder unopened.

23.2. A Bidder may, through a letter of withdrawal, withdraw its bid after it has been submitted, for valid and justifiable reason; provided that the letter of withdrawal is received by the BULACAN STATE UNIVERSITY prior to the deadline prescribed for submission and receipt of bids.

23.3. Bids requested to be withdrawn in accordance with **ITB** Clause 23.1 shall be returned unopened to the Bidders. A Bidder may also express its intention not to participate in the bidding through a letter which should reach and be stamped by the BAC before the deadline for submission and receipt of bids. A Bidder that withdraws its bid shall not be permitted to submit another bid, directly or indirectly, for the same contract.

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

### **24. Opening and Preliminary Examination of Bids**

24.1. The BAC shall open the first bid envelopes of Bidders in public as specified in the **BDS** to determine each Bidder's compliance with the documents prescribed in **ITB** Clause 12. For this purpose, the BAC shall check the submitted documents of each bidder against a checklist of required documents to ascertain if they are all present, using a non-discretionary "pass/fail" criterion. If a bidder submits the required document, it shall be rated "passed" for that particular requirement. In this regard, bids that fail to

include any requirement or are incomplete or patently insufficient shall be considered as “failed”. Otherwise, the BAC shall rate the said first bid envelope as “passed”.

- 24.2. Unless otherwise specified in the **BDS**, immediately after determining compliance with the requirements in the first envelope, the BAC shall forthwith open the second bid envelope of each remaining eligible bidder whose first bid envelope was rated “passed”. The second envelope of each complying bidder shall be opened within the same day. In case one or more of the requirements in the second envelope of a particular bid is missing, incomplete or patently insufficient, and/or if the submitted total bid price exceeds the ABC unless otherwise provided in **ITB** Clause 13.1(b), the BAC shall rate the bid concerned as “failed”. Only bids that are determined to contain all the bid requirements for both components shall be rated “passed” and shall immediately be considered for evaluation and comparison.
- 24.3. Letters of withdrawal shall be read out and recorded during bid opening, and the envelope containing the corresponding withdrawn bid shall be returned to the Bidder unopened. If the withdrawing Bidder’s representative is in attendance, the original bid and all copies thereof shall be returned to the representative during the bid opening. If the representative is not in attendance, the Bid shall be returned unopened by registered mail. The Bidder may withdraw its bid prior to the deadline for the submission and receipt of bids, provided that the corresponding letter of withdrawal contains a valid authorization requesting for such withdrawal, subject to appropriate administrative sanctions.
- 24.4. If a Bidder has previously secured a certification from the BULACAN STATE UNIVERSITY to the effect that it has previously submitted the above-enumerated Class “A” Documents, the said certification may be submitted in lieu of the requirements enumerated in **ITB** Clause 12.1(a), items (i) to (vi).
- 24.5. In the case of an eligible foreign Bidder as described in **ITB** Clause 5, the Class “A” Documents enumerated in **ITB** Clause 12.1(a) may be substituted with the appropriate equivalent documents, if any, issued by the country of the foreign Bidder concerned.
- 24.6. Each partner of a joint venture agreement shall likewise submit the documents required in **ITB** Clauses 12.1(a)(i) and 12.1(a)(ii). Submission of documents required under **ITB** Clauses 12.1(a)(iii) to 12.1(a)(vi) by any of the joint venture partners constitutes compliance.

## **E. Evaluation and Comparison of Bids**

### **25. Process to be Confidential**

- 25.1. Members of the BAC, including its staff and personnel, as well as its Secretariat and TWG, are prohibited from making or accepting any kind of communication with any bidder regarding the evaluation of their bids until the issuance of the Notice of Award, unless in the case of **ITB** Clause 26.
- 25.2. Any effort by a bidder to influence the BULACAN STATE UNIVERSITY in the BULACAN STATE UNIVERSITY’s decision in respect of Bid evaluation, Bid comparison or contract award will result in the rejection of the Bidder’s Bid.

## 26. Clarification of Bids

To assist in the evaluation, comparison and post-qualification of the bids, the BULACAN STATE UNIVERSITY may ask in writing any Bidder for a clarification of its bid. All responses to requests for clarification shall be in writing. Any clarification submitted by a Bidder in respect to its bid and that is not in response to a request by the BULACAN STATE UNIVERSITY shall not be considered.

## 27. Detailed Evaluation and Comparison of Bids

27.1. The BULACAN STATE UNIVERSITY will undertake the detailed evaluation and comparison of Bids which have passed the opening and preliminary examination of Bids, pursuant to **ITB** Clause 24, in order to determine the Lowest Calculated Bid.

27.2. In evaluating the Bids to get the Lowest Calculated Bid, the BULACAN STATE UNIVERSITY shall undertake the following:

- (a) The detailed evaluation of the financial component of the bids, to establish the correct calculated prices of the bids; and
- (b) The ranking of the total bid prices as so calculated from the lowest to highest. The bid with the lowest price shall be identified as the Lowest Calculated Bid.

27.3. The BULACAN STATE UNIVERSITY's BAC shall immediately conduct a detailed evaluation of all bids rated "passed," using non-discretionary "pass/fail" criterion. The BAC shall consider the following in the evaluation of bids:

- (a) **Completeness of the bid.** Unless the ITB specifically allows partial bids, bids not addressing or providing all of the required items in the Schedule of Requirements including, where applicable, bill of quantities, shall be considered non-responsive and, thus, automatically disqualified. In this regard, where a required item is provided, but no price is indicated, the same shall be considered as non-responsive, but specifying a "0" (zero) for the said item would mean that it is being offered for free to the BULACAN STATE UNIVERSITY; and
- (b) **Arithmetical corrections.** Consider computational errors and omissions to enable proper comparison of all eligible bids. It may also consider bid modifications if expressly allowed in the **BDS**. Any adjustment shall be calculated in monetary terms to determine the calculated prices.

27.4. Based on the detailed evaluation of bids, those that comply with the above-mentioned requirements shall be ranked in the ascending order of their total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, to identify the Lowest Calculated Bid. Total calculated bid prices, as evaluated and corrected for computational errors, discounts and other modifications, which exceed the ABC shall not be considered, unless otherwise indicated in the **BDS**.

- 27.5. The BULACAN STATE UNIVERSITY's evaluation of bids shall only be based on the bid price quoted in the Financial Bid Form.
- 27.6. Bids shall be evaluated on an equal footing to ensure fair competition. For this purpose, all bidders shall be required to include in their bids the cost of all taxes, such as, but not limited to, value added tax (VAT), income tax, local taxes, and other fiscal levies and duties which shall be itemized in the bid form and reflected in the detailed estimates. Such bids, including said taxes, shall be the basis for bid evaluation and comparison.

## **28. Post-Qualification**

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

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

- 28.3. The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted pursuant to **ITB** Clauses 12 and 13, as well as other information as the BULACAN STATE UNIVERSITY deems necessary and appropriate, using a non-discretionary "pass/fail" criterion.
- 28.4. If the BAC determines that the Bidder with the Lowest Calculated Bid passes all the criteria for post-qualification, it shall declare the said bid as the Lowest Calculated Responsive Bid, and recommend to the BULACAN STATE UNIVERSITY the award of contract to the said Bidder at its submitted price or its calculated bid price, whichever is lower, subject to **ITB** Clause 30.3.
- 28.5. A negative determination shall result in rejection of the Bidder's Bid, in which event the BULACAN STATE UNIVERSITY shall proceed to the next Lowest Calculated Bid to make a similar determination of that Bidder's capabilities to perform satisfactorily. If the second Bidder, however, fails the post qualification, the procedure for post qualification shall be repeated for the Bidder with the next Lowest Calculated Bid, and so on until the Lowest Calculated and Responsive Bid is determined for contract award.

- 28.6. Within a period not exceeding seven (7) calendar days from the date of receipt of the recommendation of the BAC, the Head of the BULACAN STATE UNIVERSITY shall approve or disapprove the said recommendation. In the case of government owned and government-owned and/or -controlled corporations (GOCCs) and government financial institutions (GFIs), the period provided herein shall be fifteen (15) calendar days.

## **29. Reservation Clause**

- 29.1. Notwithstanding the eligibility or post-qualification of a bidder, the BULACAN STATE UNIVERSITY concerned reserves the right to review its qualifications at any stage of the procurement process if it has reasonable grounds to believe that a misrepresentation has been made by the said bidder, or that there has been a change in the Bidder's capability to undertake the project from the time it submitted its eligibility requirements. Should such review uncover any misrepresentation made in the eligibility and bidding requirements, statements or documents, or any changes in the situation of the Bidder which will affect its capability to undertake the project so that it fails the preset eligibility or bid evaluation criteria, the BULACAN STATE UNIVERSITY shall consider the said Bidder as ineligible and shall disqualify it from submitting a bid or from obtaining an award or contract.
- 29.2. Based on the following grounds, the BULACAN STATE UNIVERSITY reserves the right to reject any and all Bids, declare a Failure of Bidding at any time prior to the contract award, or not to award the contract, without thereby incurring any liability, and make no assurance that a contract shall be entered into as a result of the bidding:
- (a) if there is *prima facie* evidence of collusion between appropriate public officers or employees of the BULACAN STATE UNIVERSITY, or between the BAC and any of the bidders, or if the collusion is between or among the bidders themselves, or between a bidder and a third party, including any act which restricts, suppresses or nullifies or tends to restrict, suppress or nullify competition;
  - (b) if the BULACAN STATE UNIVERSITY's BAC is found to have failed in following the prescribed bidding procedures; or
  - (c) for any justifiable and reasonable ground where the award of the contract will not redound to the benefit of the Government as follows:
    - (i) If the physical and economic conditions have significantly changed so as to render the project no longer economically, financially or technically feasible as determined by the head of the BULACAN STATE UNIVERSITY;
    - (ii) If the project is no longer necessary as determined by the head of the BULACAN STATE UNIVERSITY; and
    - (iii) If the source of funds for the project has been withheld or reduced through no fault of the BULACAN STATE UNIVERSITY.



29.3. In addition, the BULACAN STATE UNIVERSITY may likewise declare a failure of bidding when:

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

#### **F. Award of Contract**

### **30. Contract Award**

30.1. Subject to **ITB** Clause 28, the BULACAN STATE UNIVERSITY shall award the contract to the Bidder who's Bid has been determined to be the Lowest Calculated and Responsive Bid (LCRB).

30.2. Prior to the expiration of the period of Bid validity, the BULACAN STATE UNIVERSITY shall notify the successful Bidder in writing that its Bid has been accepted, through a Notice of Award received personally or sent by registered mail or electronically, receipt of which must be confirmed in writing within two (2) days by the LCRB and submitted personally or sent by registered mail or electronically to the BULACAN STATE UNIVERSITY.

30.3. Notwithstanding the issuance of the Notice of Award, award of contract shall be subject to the following conditions:

- (a) Submission of the following documents within the prescribed period from receipt by the Bidder of the notice that it has the Lowest Calculated and Responsive Bid:
  - (i) Valid JVA, if applicable, within ten (10) calendar days;
  - (ii) Valid PCAB license and registration for the type and cost of the contract to be bid for foreign bidders, within thirty (30) calendar days, if allowed under a Treaty or International or Executive Agreement mentioned in **ITB** Clause 12.1(a)(iv);
- (b) Posting of the performance security in accordance with **ITB** Clause 32;
- (c) Signing of the contract as provided in **ITB** Clause 31; and
- (d) Approval by higher authority, if required.

### 31. Signing of the Contract

- 31.1. At the same time as the BULACAN STATE UNIVERSITY notifies the successful Bidder that its Bid has been accepted, the BULACAN STATE UNIVERSITY shall send the Contract Form to the Bidder, which Contract has been provided in the Bidding Documents, incorporating therein all agreements between the parties.
- 31.2. Within ten (10) calendar days from receipt of the Notice of Award, the successful Bidder shall post the required performance security, sign and date the contract and return it to the BULACAN STATE UNIVERSITY.
- 31.3. The BULACAN STATE UNIVERSITY shall enter into contract with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.
- 31.4. The following documents shall form part of the contract:
- (a) Contract Agreement;
  - (b) Bidding Documents;
  - (c) Winning bidder's bid, including the Technical and Financial Proposals, and all other documents/statements submitted;
  - (d) Performance Security;
  - (e) Credit line in accordance with **ITB** Clause 5.5, if applicable;
  - (f) Notice of Award of Contract; and
  - (g) Other contract documents that may be required by existing laws and/or specified in the **BDS**.

### 32. Performance Security

- 32.1. To guarantee the faithful performance by the winning Bidder of its obligations under the contract, it shall post a performance security within a maximum period of ten (10) calendar days from the receipt of the Notice of Award from the BULACAN STATE UNIVERSITY and in no case later than the signing of the contract.
- 32.2. The procuring entity shall prescribe at least two (2) acceptable forms of performance security taken from two (2) categories below that bidders may opt to use, denominated in Philippine Pesos and posted in favor of the Procuring Entity in an amount equal to the percentage of the total contract price as stated in the **BDS** in accordance with the following schedule:

Form of Performance Security	Amount of Performance Security (Equal to Percentage of the Total Contract Price)
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(a) Cash or cashier's/manager's check issued by a Universal or Commercial Bank.	Ten percent (10%)
(b) Bank draft/guarantee or irrevocable letter of credit issued by a Universal or Commercial Bank: Provided, however, that it shall be confirmed or authenticated by a Universal or Commercial Bank, if issued by a foreign bank.	
(c) Surety bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security; and/or	Thirty percent (30%)
(d) Any combination of the foregoing.	Proportionate to share of form with respect to total amount of security

32.3. Failure of the successful Bidder to comply with the above-mentioned requirement shall constitute sufficient ground for the annulment of the award and forfeiture of the bid security, in which event the BULACAN STATE UNIVERSITY shall initiate and complete the post qualification of the second Lowest Calculated Bid. The procedure shall be repeated until the Lowest Calculated and Responsive Bid is identified and selected for contract award. However if no Bidder passed post-qualification, the BAC shall declare the bidding a failure and conduct a re-bidding with re-advertisement.

### **33. Notice to Proceed**

33.1. Within three (3) calendar days from the date of approval of the Contract by the appropriate government approving authority, the BULACAN STATE UNIVERSITY shall issue its Notice to Proceed to the Bidder.

33.2. The contract effectivity date shall be provided in the Notice to Proceed by the BULACAN STATE UNIVERSITY, which date shall not be later than seven (7) calendar days from the issuance of the Notice to Proceed.

### **34. Protest Mechanism**

Decision of the procuring entity at any stage of the procurement process may be questioned in accordance with Section 55 of the revised Implementing Rules and Regulations of Republic Act 9184.

# Bid Data Sheet

ITB Clause	
1.1	<p>The <b>Procuring Entity</b> is <b><i>Bulacan State University (BulSU)</i></b>.</p> <p>The name of the Contract is <b>Proposed BulSU Science Research and Learning Center</b></p> <p>The identification number of the Contract is <b>Infra-2015-18</b>.</p>
2	<p>The Funding Source is:</p> <p>The Government of the Philippines (GOP) through <b><i>General Fund for the contract approved by the governing Boards in the amount of Twenty Two Million Three Hundred Sixty Six Thousand Nine Hundred Fourteen Pesos and 64/100 (Php. 22,366,914.64)</i></b>.</p> <p>The name of the Project is <b>Proposed BulSU Science Research and Learning (Infra-2015-18)</b>.</p>
3.1	No further instructions.
5.1	No further instructions.
5.2	Bidding is restricted to eligible bidders as defined in ITB Clause 5.1.
5.4	<p>The prospective bidder must have an experience of having completed at least one (1) contract that is similar to the contract to be bid, and whose value, adjusted to current prices using the NSO consumer price indices, must be at least fifty per cent (50%) of the ABC to be bid: Provided, however, That contractors under Small A and Small B Categories without similar experience on the contract to be bid may be allowed to bid if the cost of such contract is not more than fifty per cent (50%) of the Allowable Range of Contract Cost (ARCC) of their registration based on the guidelines as prescribed by the PCAB.</p> <p><b><i>Similar project refers to School / Commercial Buildings with corresponding supporting documents:</i></b></p> <p><b><i>(1) Programs of Works;</i></b></p> <p><b><i>(2) Notice of Award or Notice to Proceed or Contract issued by the owners.</i></b></p> <p><b><i>(3) Owner's Certificate of Final Acceptance; or the Constructors Performance Evaluation Summary (CPES) Final Rating or the Certificate of Completion, must be satisfactory.</i></b></p>
8.1	"Subcontracting is not allowed."
8.2	"Not applicable".
9.1	The BULACAN STATE UNIVERSITY will hold a <b><i>Pre-bid Conference</i></b> for this Project on <b><i>July 14, 2015 (Tuesday), 9:00 a.m.</i></b> at the <b><i>University President's Boardroom, 2<sup>nd</sup> Floor, Flores Hall, Bulacan State University, Guinhawa, City of Malolos, 3000 Bulacan</i></b>

10.1	<p>The BULACAN STATE UNIVERSITY's address is: <i>Guinhawa, City of Malolos, 3000 Bulacan</i></p> <p><b>Catherine B. Pulumbarit</b>  <i>BAC Secretariat</i>          Telefax No. : (044) 794-7755          Website: <a href="http://www.bulsu.edu.ph">www.bulsu.edu.ph</a></p>
10.3	No further instructions.
12.1(a)(i)	Registration Certificate from the SEC, DTI or CDA. (Original copy of official receipt if pending issuance of certificate of registration.)
12.1(a)(ii)	Valid Mayor's permit issued by the city or municipality where the principal place of business of the prospective bidder is located.
12.1(a)(iii)	<p>The statement of all ongoing government and private contracts including contracts awarded but not yet started. (Please see attached prescribed forms- Section IX of the bidding documents)</p> <p>Note:          1. For the list of on-going it must be supported with the ff.              a. Notice of Award or Notice to Proceed or Contract issued by the owners; and              b. Certificate of Good Standing (No slippage and delay)</p>
12.1(a)(iv)	Valid Philippine Contractors Accreditation Board (PCAB) license (At least Medium A Category B, General Construction)
12.1(a)(vii)	Tax Clearance per Executive Order 398, Series of 2005, as finally reviewed and approved by the BIR
12.1(b)(ii.1)	Organizational chart for the contract to be bid;
12.1(b)(ii.2)	<p>List of contractor's personnel:</p> <p><b>Registered Civil Engineer (Supervising Site Engineer to be present throughout the duration of the project), Registered Electrical Engineer, Registered Mechanical Engineer, Registered Sanitary Engineer, Safety Officer, Certified Materials Engineer and other needed personnel to be assigned to the project with their complete qualifications and experiences data.</b></p>
12.1(b)(ii.3)	List of contractor's equipment units necessary for the project, which are owned, leased, and/or under purchase agreements, <b>supported by certification</b> of availability of equipment from the equipment lessor/vendor for the duration of the project.
12.1(b)(iv)	<p>Additional documents to be included in the technical envelope</p> <p><b>a. Construction Schedule and S-curve;</b>  <b>b. Manpower Schedule;</b>  <b>c. Detailed Construction Methods;</b>  <b>d. PERT/CPM (network diagram);</b>  <b>e. Equipment Utilization Schedule;</b>  <b>f. Site Inspection Certificate issued by BulSU; and</b>  <b>g. Contractor's Confirmation (Construction Specifications)</b></p>
13.1(b)	<ul style="list-style-type: none"> <li>- Duly signed Financial Bid Form.</li> <li>- Duly signed and priced Bill of Quantities</li> <li>- Duly signed and priced Detailed Estimates</li> <li>- Cash Flow by the Quarter and Payment Schedule</li> <li>- Detailed Unit Price Analysis</li> <li>- Back-up quantity computation sheet/tally sheet 9 as programmed</li> <li>- Soft copy in compact disc (CD) of the duly priced Bill of Quantities &amp; Detailed Estimates using Microsoft Excel</li> </ul>

13.1(b)	The ABC is <b><i>Twenty Two Million Three Hundred Sixty Six Thousand Nine Hundred Fourteen Pesos and 64/100 (Php. 22,366,914.64)</i></b> . Any bid with a financial component exceeding this amount shall not be accepted.
14.2	No further instructions.
15.4	No further instructions.
16.1	The bid prices shall be quoted in Philippine Pesos.
17.1	Bids will be valid until <b><i>one hundred twenty (120) calendar days after bid opening.</i></b>
18.1	The bidder has the option to use any other form in accordance with the following amount: 1. The amount of <b>P 447,338.29</b> [2% of ABC], if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; 2. The amount of <b>P 1,118,345.73</b> [5% of ABC] if bid security is in Surety Bond; or 3. Any combination of the foregoing proportionate to the share of form with respect to total amount of security. 4. Bid-Securing Declaration
18.2	The bid security shall be valid until <b><i>one hundred twenty (120) calendar days after bid opening.</i></b>
20.3	Each Bidder shall submit <b><i>one (1) original and two (2) certified photocopies of the original technical and the financial components duly signed and sealed.</i></b>
21	The address for submission of bids is:  <b>BIDS AND AWARDS COMMITTEE</b> BULACAN STATE UNIVERSITY Guinhawa, City of Malolos, 3000 Bulacan.  The deadline for submission of bids is on <b><i>July 28, 2015 (Tuesday); 9:00 a.m.</i></b>
24.1	The place of bid opening is:  <b>University President's Boardroom</b> <b>2<sup>nd</sup> Floor, Flores Hall</b> <b>Bulacan State University</b> <b>Guinhawa, City of Malolos, 3000 Bulacan.</b>  The date and time of bid opening is on <b><i>July 28, 2015 (Tuesday); 9:00 a.m.</i></b>
24.2	No further instructions.
24.4	If the Bidder maintains a current and updated file of his Class "A" Documents, a Certificate of Registration and Membership issued by Phil-GEPS may be submitted in lieu of the said documents. The said Certificate shall be enclosed in the eligibility and technical documents.
27.3(b)	<b><i>BID MODIFICATION IS NOT ALLOWED.</i></b>
27.4	No further instructions.
28.2 (a)	<b>Bidders may submit manually filed tax returns or tax returns filed through the Electronic Filing and Payments System (EFPS).</b>  <b><i>NOTE: The latest income and business tax returns are those within the last six months</i></b>

	<i>preceding the date of bid submission.</i>
28.2(c)	No further instructions.
31.4(g)	No further instructions.
32.2	<p>The <b>performance security</b> shall be in at least two (2) acceptable forms which can be taken from two (2) categories below, that bidders may opt to use, denominated in Philippine Pesos and posted in favor of the Bulacan State University:</p> <ol style="list-style-type: none"> <li>1. The amount of <b>[10% of Contract Price]</b>, if performance security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</li> <li>2. The amount of <b>[30% of Contract Price]</b> if performance security is in Surety Bond; or</li> <li>3. Any combination of the foregoing proportionate to the share of form with respect to total amount of security.</li> </ol>

## 1. Definition

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

- 1.1. The **Arbiter** is the person appointed jointly by the BULACAN STATE UNIVERSITY and the Contractor to resolve disputes in the first instance, as provided for in **GCC** Clause 21.
- 1.2. **Bill of Quantities** refers to a list of the specific items of the Work and their corresponding unit prices, lump sums, and/or provisional sums.
- 1.3. The **Completion Date** is the date of completion of the Works as certified by the BULACAN STATE UNIVERSITY's Representative, in accordance with **GCC** Clause 49.
- 1.4. The **Contract** is the contract between the BULACAN STATE UNIVERSITY and the Contractor to execute, complete, and maintain the Works.
- 1.5. The **Contract Price** is the price stated in the Letter of Acceptance and thereafter to be paid by the BULACAN STATE UNIVERSITY to the Contractor for the execution of the Works in accordance with this Contract.
- 1.6. **Contract Time Extension** is the allowable period for the Contractor to complete the Works in addition to the original Completion Date stated in this Contract.
- 1.7. The **Contractor** is the juridical entity whose proposal has been accepted by the BULACAN STATE UNIVERSITY and to whom the Contract to execute the Work was awarded.
- 1.8. The **Contractor's Bid** is the signed offer or proposal submitted by the Contractor to the BULACAN STATE UNIVERSITY in response to the Bidding Documents.
- 1.9. **Days** are calendar days; months are calendar months.
- 1.10. **Dayworks** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
- 1.11. A **Defect** is any part of the Works not completed in accordance with the Contract.
- 1.12. The **Defects Liability Certificate** is the certificate issued by BULACAN STATE UNIVERSITY's Representative upon correction of defects by the Contractor.
- 1.13. The **Defects Liability Period** is the one year period between contract completion and final acceptance within which the Contractor assumes the responsibility to undertake the repair of any damage to the Works at his own expense.



- 1.14. **Drawings** are graphical presentations of the Works. They include all supplementary details, shop drawings, calculations, and other information provided or approved for the execution of this Contract.
- 1.15. **Equipment** refers to all facilities, supplies, appliances, materials or things required for the execution and completion of the Work provided by the Contractor and which shall not form or are not intended to form part of the Permanent Works.
- 1.16. The **Intended Completion Date** refers to the date specified in the **SCC** when the Contractor is expected to have completed the Works. The Intended Completion Date may be revised only by the BULACAN STATE UNIVERSITY's Representative by issuing an extension of time or an acceleration order.
- 1.17. **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- 1.18. The **Notice to Proceed** is a written notice issued by the BULACAN STATE UNIVERSITY or the BULACAN STATE UNIVERSITY's Representative to the Contractor requiring the latter to begin the commencement of the work not later than a specified or determinable date.
- 1.19. **Permanent Works** all permanent structures and all other project features and facilities required to be constructed and completed in accordance with this Contract which shall be delivered to the BULACAN STATE UNIVERSITY and which shall remain at the Site after the removal of all Temporary Works.
- 1.20. **Plant** refers to the machinery, apparatus, and the like intended to form an integral part of the Permanent Works.
- 1.21. The **Procuring Entity** is the party who employs the Contractor to carry out the Works stated in the **SCC**.
- 1.22. The **Procuring Entity's Representative** refers to the Head of the BULACAN STATE UNIVERSITY or his duly authorized representative, identified in the **SCC**, who shall be responsible for supervising the execution of the Works and administering this Contract.
- 1.23. The **Site** is the place provided by the BULACAN STATE UNIVERSITY where the Works shall be executed and any other place or places which may be designated in the **SCC**, or notified to the Contractor by the BULACAN STATE UNIVERSITY's Representative as forming part of the Site.
- 1.24. **Site Investigation Reports** are those that were included in the Bidding Documents and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- 1.25. **Slippage** is a delay in work execution occurring when actual accomplishment falls below the target as measured by the difference between the scheduled and actual accomplishment of the Work by the Contractor as established from the work schedule. This is actually described as a percentage of the whole Works.

- 1.26. **Specifications** mean the description of Works to be done and the qualities of materials to be used, the equipment to be installed and the mode of construction.
- 1.27. The **Start Date**, as specified in the **SCC**, is the date when the Contractor is obliged to commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- 1.28. A **Subcontractor** is any person or organization to whom a part of the Works has been subcontracted by the Contractor, as allowed by the BULACAN STATE UNIVERSITY, but not any assignee of such person.
- 1.29. **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Permanent Works.
- 1.30. **Work(s)** refer to the Permanent Works and Temporary Works to be executed by the Contractor in accordance with this Contract, including (i) the furnishing of all labor, materials, equipment and others incidental, necessary or convenient to the complete execution of the Works; (ii) the passing of any tests before acceptance by the BULACAN STATE UNIVERSITY's Representative; (iii) and the carrying out of all duties and obligations of the Contractor imposed by this Contract as described in the **SCC**.

## **2. Interpretation**

- 2.1. In interpreting the Conditions of Contract, singular also means plural, male also means female or neuter, and the other way around. Headings have no significance. Words have their normal meaning under the language of this Contract unless specifically defined. The BULACAN STATE UNIVERSITY's Representative will provide instructions clarifying queries about the Conditions of Contract.
- 2.2. If sectional completion is specified in the **SCC**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

## **3. Governing Language and Law**

- 3.1. This Contract has been executed in the English language, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract. All correspondence and other documents pertaining to this Contract which are exchanged by the parties shall be written in English.
- 3.2. This Contract shall be interpreted in accordance with the laws of the Republic of the Philippines.

## **4. Communications**

Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is received by the concerned party.

## **5. Possession of Site**

- 5.1. On the date specified in the **SCC**, the BULACAN STATE UNIVERSITY shall grant the Contractor possession of so much of the Site as may be required to enable it to proceed with the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the BULACAN STATE UNIVERSITY to give possession in accordance with the terms of this clause, the BULACAN STATE UNIVERSITY'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 BULACAN STATE UNIVERSITY.
- 5.2. If possession of a portion is not given by the date stated in the **SCC** Clause 5.1, the BULACAN STATE UNIVERSITY will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay shall be in accordance with **GCC** Clause 47.
- 5.3. The Contractor shall bear all costs and charges for special or temporary right-of-way required by it in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by it for purposes of the Works.
- 5.4. The Contractor shall allow the BULACAN STATE UNIVERSITY's Representative and any person authorized by the BULACAN STATE UNIVERSITY's Representative access to the Site and to any place where work in connection with this Contract is being carried out or is intended to be carried out.

## **6. The Contractor's Obligations**

- 6.1. The Contractor shall carry out the Works properly and in accordance with this Contract. The Contractor shall provide all supervision, labor, Materials, Plant and Contractor's Equipment, which may be required. All Materials and Plant on Site shall be deemed to be the property of the BULACAN STATE UNIVERSITY.
- 6.2. The Contractor shall commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program of Work submitted by the Contractor, as updated with the approval of the BULACAN STATE UNIVERSITY's Representative, and complete them by the Intended Completion Date.
- 6.3. The Contractor shall be responsible for the safety of all activities on the Site.
- 6.4. The Contractor shall carry out all instructions of the BULACAN STATE UNIVERSITY's Representative that comply with the applicable laws where the Site is located.
- 6.5. The Contractor shall employ the key personnel named in the Schedule of Key Personnel, as referred to in the **SCC**, to carry out the supervision of the

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

- 6.6. If the BULACAN STATE UNIVERSITY's Representative asks the Contractor to remove a member of the Contractor's staff or work force, for justifiable cause, the Contractor shall ensure that the person leaves the Site within seven (7) days and has no further connection with the Work in this Contract.
- 6.7. During Contract implementation, the Contractor and his subcontractors shall abide at all times by all labor laws, including child labor related enactments, and other relevant rules.
- 6.8. The Contractor shall submit to the BULACAN STATE UNIVERSITY for consent the name and particulars of the person authorized to receive instructions on behalf of the Contractor.
- 6.9. The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the BULACAN STATE UNIVERSITY between the dates given in the schedule of other contractors particularly when they shall require access to the Site. The Contractor shall also provide facilities and services for them during this period. The BULACAN STATE UNIVERSITY may modify the schedule of other contractors, and shall notify the Contractor of any such modification thereto.
- 6.10. Should anything of historical or other interest or of significant value be unexpectedly discovered on the Site, it shall be the property of the BULACAN STATE UNIVERSITY. The Contractor shall notify the BULACAN STATE UNIVERSITY's Representative of such discoveries and carry out the BULACAN STATE UNIVERSITY's Representative's instructions in dealing with them.

## **7. Performance Security**

- 7.1. Within ten (10) calendar days from receipt of the Notice of Award from the BULACAN STATE UNIVERSITY but in no case later than the signing of the contract by both parties, the Contractor shall furnish the performance security in any the forms prescribed in **ITB** Clause 32.2.
- 7.2. The performance security posted in favor of the BULACAN STATE UNIVERSITY shall be forfeited in the event it is established that the Contractor is in default in any of its obligations under the Contract.
- 7.3. The performance security shall remain valid until issuance by the BULACAN STATE UNIVERSITY of the Certificate of Final Acceptance.
- 7.4. The performance security may be released by the BULACAN STATE UNIVERSITY and returned to the Contractor after the issuance of the Certificate of Final Acceptance subject to the following conditions:
  - (a) There are no pending claims against the Contractor or the surety company filed by the BULACAN STATE UNIVERSITY;

- (b) The Contractor has no pending claims for labor and materials filed against it; and
  - (c) Other terms specified in the **SCC**.
- 7.5. The Contractor shall post an additional performance security following the amount and form specified in **ITB** Clause 32.2 to cover any cumulative increase of more than ten percent (10%) over the original value of the contract as a result of amendments to order or change orders, extra work orders and supplemental agreements, as the case may be. The Contractor shall cause the extension of the validity of the performance security to cover approved contract time extensions.
- 7.6. In case of a reduction in the contract value or for partially completed Works under the contract which are usable and accepted by the BULACAN STATE UNIVERSITY the use of which, in the judgment of the implementing agency or the BULACAN STATE UNIVERSITY, will not affect the structural integrity of the entire project, the Procuring Entity shall allow a proportional reduction in the original performance security, provided that any such reduction is more than ten percent (10%) and that the aggregate of such reductions is not more than fifty percent (50%) of the original performance security.
- 7.7. Unless otherwise indicated in the **SCC**, the Contractor, by entering into the Contract with the BULACAN STATE UNIVERSITY, acknowledges the right of the Procuring Entity to institute action pursuant to Act 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

## **8. Subcontracting**

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

## **9. Liquidated Damages**

- 9.1. The Contractor shall pay liquidated damages to the BULACAN STATE UNIVERSITY for each day that the Completion Date is later than the Intended Completion Date. The applicable liquidated damages is at least one-tenth (1/10) of a percent of the cost of the unperformed portion for every day of delay. The total amount of liquidated damages shall not exceed ten percent (10%) of the amount of the contract. The BULACAN STATE UNIVERSITY may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor. Once the

cumulative amount of liquidated damages reaches ten percent (10%) of the amount of this Contract, the BULACAN STATE UNIVERSITY shall rescind this Contract, without prejudice to other courses of action and remedies open to it.

- 9.2. If the Intended Completion Date is extended after liquidated damages have been paid, the Engineer of the BULACAN STATE UNIVERSITY shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in **GCC** Clause 40.3.

## **10. 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.

## **11. The Procuring Entity, Licenses and Permits**

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

## **12. Contractor's Risk and Warranty Security**

- 12.1. The Contractor shall assume full responsibility for the Works from the time project construction commenced up to final acceptance by the BULACAN STATE UNIVERSITY and shall be held responsible for any damage or destruction of the Works except those occasioned by *force majeure*. The Contractor shall be fully responsible for the safety, protection, security, and convenience of his personnel, third parties, and the public at large, as well as the Works, Equipment, installation, and the like to be affected by his construction work.
- 12.2. The defects liability period for infrastructure projects shall be one year from contract completion up to final acceptance by the BULACAN STATE UNIVERSITY. During this period, the Contractor shall undertake the repair works, at his own expense, of any damage to the Works on account of the use of materials of inferior quality within ninety (90) days from the time the Head of the BULACAN STATE UNIVERSITY has issued an order to undertake repair. In case of failure or refusal to comply with this mandate, the BULACAN STATE UNIVERSITY shall undertake such repair works and shall be entitled to full reimbursement of expenses incurred therein upon demand.
- 12.3. Unless otherwise indicated in the **SCC**, in case the Contractor fails to comply with the preceding paragraph, the BULACAN STATE UNIVERSITY shall forfeit its performance security, subject its properties to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 12.4. After final acceptance of the Works by the BULACAN STATE UNIVERSITY, the Contractor shall be held responsible for "Structural Defects", *i.e.*, major faults/flaws/deficiencies in one or more key structural elements of the project which may lead to structural failure of the completed elements or structure, or

“Structural Failures”, *i.e.*, where one or more key structural elements in an infrastructure facility fails or collapses, thereby rendering the facility or part thereof incapable of withstanding the design loads, and/or endangering the safety of the users or the general public:

- (a) Contractor – Where Structural Defects/Failures arise due to faults attributable to improper construction, use of inferior quality/substandard materials, and any violation of the contract plans and specifications, the contractor shall be held liable;
- (b) Consultants – Where Structural Defects/Failures arise due to faulty and/or inadequate design and specifications as well as construction supervision, then the consultant who prepared the design or undertook construction supervision for the project shall be held liable;
- (c) BULACAN STATE UNIVERSITY’s Representatives/Project Manager/Construction Managers and Supervisors – The project owner’s representative(s), project manager, construction manager, and supervisor(s) shall be held liable in cases where the Structural Defects/Failures are due to his/their willful intervention in altering the designs and other specifications; negligence or omission in not approving or acting on proposed changes to noted defects or deficiencies in the design and/or specifications; and the use of substandard construction materials in the project;
- (d) Third Parties - Third Parties shall be held liable in cases where Structural Defects/Failures are caused by work undertaken by them such as leaking pipes, diggings or excavations, underground cables and electrical wires, underground tunnel, mining shaft and the like, in which case the applicable warranty to such structure should be levied to third parties for their construction or restoration works.
- (e) Users - In cases where Structural Defects/Failures are due to abuse/misuse by the end user of the constructed facility and/or non-compliance by a user with the technical design limits and/or intended purpose of the same, then the user concerned shall be held liable.

12.5. The warranty against Structural Defects/Failures, except those occasioned on force majeure, shall cover the period specified in the **SCC** reckoned from the date of issuance of the Certificate of Final Acceptance by the BULACAN STATE UNIVERSITY.

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

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

(b) Bank guarantee confirmed by Universal or Commercial bank: provided, however, that the letter of credit shall be confirmed or authenticated by a Universal or Commercial bank, if issued by a foreign bank	Ten Percent (10%)
(c) Surety bond callable upon demand issued by GSIS or any surety or insurance company duly certified by the Insurance Commission	Thirty Percent (30%)

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

12.8. In case of structural defects/failure occurring during the applicable warranty period provided in **GCC** Clause 12.5, the BULACAN STATE UNIVERSITY shall undertake the necessary restoration or reconstruction works and shall be entitled to full reimbursement by the parties found to be liable for expenses incurred therein upon demand, without prejudice to the filing of appropriate administrative, civil, and/or criminal charges against the responsible persons as well as the forfeiture of the warranty security posted in favor of the BULACAN STATE UNIVERSITY.

### 13. Liability of the Contractor

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

### 14. Procuring Entity's Risk

14.1. From the Start Date until the Certificate of Final Acceptance has been issued, the following are risks of the BULACAN STATE UNIVERSITY:

- (a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to:
  - (i) any type of use or occupation of the Site authorized by the Procuring Entity after the official acceptance of the works; or
  - (ii) negligence, breach of statutory duty, or interference with any legal right by the BULACAN STATE UNIVERSITY or by any person employed by or contracted to him except the Contractor.
- (b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the BULACAN STATE UNIVERSITY's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

### 15. Insurance



- 15.1. The Contractor shall, under his name and at his own expense, obtain and maintain, for the duration of this Contract, the following insurance coverage:
- (a) Contractor's All Risk Insurance;
  - (b) Transportation to the project Site of Equipment, Machinery, and Supplies owned by the Contractor;
  - (c) Personal injury or death of Contractor's employees; and
  - (d) Comprehensive insurance for third party liability to Contractor's direct or indirect act or omission causing damage to third persons.
- 15.2. The Contractor shall provide evidence to the BULACAN STATE UNIVERSITY's Representative that the insurances required under this Contract have been effected and shall, within a reasonable time, provide copies of the insurance policies to the BULACAN STATE UNIVERSITY's Representative. Such evidence and such policies shall be provided to the BULACAN STATE UNIVERSITY's through the BULACAN STATE UNIVERSITY's Representative.
- 15.3. The Contractor shall notify the insurers of changes in the nature, extent, or program for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of this Contract and shall produce to the BULACAN STATE UNIVERSITY's Representative the insurance policies in force including the receipts for payment of the current premiums.
- The above insurance policies shall be obtained from any reputable insurance company approved by the BULACAN STATE UNIVERSITY's Representative.
- 15.4. If the Contractor fails to obtain and keep in force the insurances referred to herein or any other insurance which he may be required to obtain under the terms of this Contract, the BULACAN STATE UNIVERSITY may obtain and keep in force any such insurances and pay such premiums as may be necessary for the purpose. From time to time, the BULACAN STATE UNIVERSITY may deduct the amount it shall pay for said premiums including twenty five percent (25%) therein from any monies due, or which may become due, to the Contractor, without prejudice to the BULACAN STATE UNIVERSITY exercising its right to impose other sanctions against the Contractor pursuant to the provisions of this Contract.
- 15.5. In the event the Contractor fails to observe the above safeguards, the BULACAN STATE UNIVERSITY may, at the Contractor's expense, take whatever measure is deemed necessary for its protection and that of the Contractor's personnel and third parties, and/or order the interruption of dangerous Works. In addition, the Procuring Entity may refuse to make the payments under **GCC** Clause 40 until the Contractor complies with this Clause.
- 15.6. The Contractor shall immediately replace the insurance policy obtained as required in this Contract, without need of the BULACAN STATE UNIVERSITY's demand, with a new policy issued by a new insurance

company acceptable to the BULACAN STATE UNIVERSITY for any of the following grounds:

- (a) The issuer of the insurance policy to be replaced has:
  - (i) become bankrupt;
  - (ii) been placed under receivership or under a management committee;
  - (iii) been sued for suspension of payment; or
  - (iv) been suspended by the Insurance Commission and its license to engage in business or its authority to issue insurance policies cancelled; or
  - (v) Where reasonable grounds exist that the insurer may not be able, fully and promptly, to fulfill its obligation under the insurance policy.

#### **16. Termination for Default of Contractor**

- 16.1. The BULACAN STATE UNIVERSITY shall terminate this Contract for default when any of the following conditions attend its implementation:
- 16.2. Due to the Contractor's fault and while the project is on-going, it has incurred negative slippage of fifteen percent (15%) or more in accordance with Presidential Decree 1870, regardless of whether or not previous warnings and notices have been issued for the Contractor to improve his performance;
- 16.3. Due to its own fault and after this Contract time has expired, the Contractor incurs delay in the completion of the Work after this Contract has expired; or
- 16.4. The Contractor:
  - (a) abandons the contract Works, refuses or fails to comply with a valid instruction of the Procuring Entity or fails to proceed expeditiously and without delay despite a written notice by the BULACAN STATE UNIVERSITY;
  - (b) does not actually have on the project Site the minimum essential equipment listed on the Bid necessary to prosecute the Works in accordance with the approved Program of Work and equipment deployment schedule as required for the project;
  - (c) does not execute the Works in accordance with this Contract or persistently or flagrantly neglects to carry out its obligations under this Contract;
  - (d) neglects or refuses to remove materials or to perform a new Work that has been rejected as defective or unsuitable; or
  - (e) sub-lets any part of this Contract without approval by the BULACAN STATE UNIVERSITY.

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

**17. Termination for Default of Procuring Entity**

The Contractor may terminate this Contract with the BULACAN STATE UNIVERSITY if the works are completely stopped for a continuous period of at least sixty (60) calendar days through no fault of its own, due to any of the following reasons:

- (a) Failure of the BULACAN STATE UNIVERSITY to deliver, within a reasonable time, supplies, materials, right-of-way, or other items it is obligated to furnish under the terms of this Contract; or
- (b) The prosecution of the Work is disrupted by the adverse peace and order situation, as certified by the Armed Forces of the Philippines Provincial Commander and approved by the Secretary of National Defense.

**18. Termination for Other Causes**

- 18.1. The BULACAN STATE UNIVERSITY may terminate this Contract, in whole or in part, at any time for its convenience. The Head of the BULACAN STATE UNIVERSITY may terminate this Contract for the convenience of the BULACAN STATE UNIVERSITY if he has determined the existence of conditions that make Project Implementation economically, financially or technically impractical and/or unnecessary, such as, but not limited to, fortuitous event(s) or changes in law and National Government policies.
- 18.2. The BULACAN STATE UNIVERSITY or the Contractor may terminate this Contract if the other party causes a fundamental breach of this Contract.
- 18.3. Fundamental breaches of Contract shall include, but shall not be limited to, the following:
- (a) The Contractor stops work for twenty eight (28) days when no stoppage of work is shown on the current Program of Work and the stoppage has not been authorized by the BULACAN STATE UNIVERSITY's Representative;
  - (b) The BULACAN STATE UNIVERSITY's Representative instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within twenty eight (28) days;
  - (c) The BULACAN STATE UNIVERSITY shall terminate this Contract if the Contractor is declared bankrupt or insolvent as determined with finality by a court of competent jurisdiction. In this event, termination will be without compensation to the Contractor, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the BULACAN STATE UNIVERSITY and/or the Contractor. In the case of the Contractor's insolvency, any Contractor's Equipment which the BULACAN STATE UNIVERSITY instructs in the notice is to be used until the completion of the Works;

- (d) A payment certified by the BULACAN STATE UNIVERSITY's Representative is not paid by the BULACAN STATE UNIVERSITY to the Contractor within eighty four (84) days from the date of the BULACAN STATE UNIVERSITY's Representative's certificate;
- (e) The BULACAN STATE UNIVERSITY's Representative gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the BULACAN STATE UNIVERSITY's Representative;
- (f) The Contractor does not maintain a Security, which is required;
- (g) The Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as defined in the **GCC** Clause 9; and
- (h) In case it is determined prima facie by the BULACAN STATE UNIVERSITY that the Contractor has engaged, before or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to, the following:
  - (i) corrupt, fraudulent, collusive, coercive, and obstructive practices as defined in **ITB** Clause 3.1(a), unless otherwise specified in the SCC;
  - (ii) drawing up or using forged documents;
  - (iii) using adulterated materials, means or methods, or engaging in production contrary to rules of science or the trade; and
  - (iv) any other act analogous to the foregoing.

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

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

18.6. If this Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

## **19. Procedures for Termination of Contracts**

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

- (a) Upon receipt of a written report of acts or causes which may constitute ground(s) for termination as aforementioned, or upon its own initiative, the BULACAN STATE UNIVERSITY shall, within a period of seven (7) calendar days, verify the existence of such ground(s) and cause the execution of a Verified Report, with all relevant evidence attached;
- (b) Upon recommendation by the BULACAN STATE UNIVERSITY, the Head of the BULACAN STATE UNIVERSITY shall terminate this Contract only by a written notice to the Contractor conveying the termination of this Contract. The notice shall state:
  - (i) that this Contract is being terminated for any of the ground(s) afore-mentioned, and a statement of the acts that constitute the ground(s) constituting the same;
  - (ii) the extent of termination, whether in whole or in part;
  - (iii) an instruction to the Contractor to show cause as to why this Contract should not be terminated; and
  - (iv) special instructions of the BULACAN STATE UNIVERSITY, if any.

The Notice to Terminate shall be accompanied by a copy of the Verified Report;

- (c) Within a period of seven (7) calendar days from receipt of the Notice of Termination, the Contractor shall submit to the Head of the BULACAN STATE UNIVERSITY a verified position paper stating why the contract should not be terminated. If the Contractor fails to show cause after the lapse of the seven (7) day period, either by inaction or by default, the Head of the BULACAN STATE UNIVERSITY shall issue an order terminating the contract;
- (d) The BULACAN STATE UNIVERSITY may, at any time before receipt of the Bidder's verified position paper described in item (c) above withdraw the Notice to Terminate if it is determined that certain items or works subject of the notice had been completed, delivered, or performed before the Contractor's receipt of the notice;
- (e) Within a non-extendible period of ten (10) calendar days from receipt of the verified position paper, the Head of the BULACAN STATE UNIVERSITY shall decide whether or not to terminate this Contract. It shall serve a written notice to the Contractor of its decision and, unless otherwise provided in the said notice, this Contract is deemed terminated from receipt of the Contractor of the notice of decision. The termination shall only be based on the ground(s) stated in the Notice to Terminate; and
- (f) The Head of the BULACAN STATE UNIVERSITY may create a Contract Termination Review Committee (CTRC) to assist him in the discharge of this function. All decisions recommended by the CTRC shall be subject to the approval of the Head of the BULACAN STATE UNIVERSITY.

- 19.2. Pursuant to Section 69(f) of RA 9184 and without prejudice to the imposition of additional administrative sanctions as the internal rules of the agency may provide and/or further criminal prosecution as provided by applicable laws, the BULACAN STATE UNIVERSITY shall impose on contractors after the termination of the contract the penalty of suspension for one (1) year for the first offense, suspension for two (2) years for the second offense from participating in the public bidding process, for violations committed during the contract implementation stage, which include but not limited to the following:
- (a) Failure of the contractor, due solely to his fault or negligence, to mobilize and start work or performance within the specified period in the Notice to Proceed ("NTP");
  - (b) Failure by the contractor to fully and faithfully comply with its contractual obligations without valid cause, or failure by the contractor to comply with any written lawful instruction of the procuring entity or its representative(s) pursuant to the implementation of the contract. For the procurement of infrastructure projects or consultancy contracts, lawful instructions include but are not limited to the following:
    - (i) Employment of competent technical personnel, competent engineers and/or work supervisors;
    - (ii) Provision of warning signs and barricades in accordance with approved plans and specifications and contract provisions;
    - (iii) Stockpiling in proper places of all materials and removal from the project site of waste and excess materials, including broken pavement and excavated debris in accordance with approved plans and specifications and contract provisions;
    - (iv) Deployment of committed equipment, facilities, support staff and manpower; and
    - (v) Renewal of the effectivity dates of the performance security after its expiration during the course of contract implementation.
  - (c) Assignment and subcontracting of the contract or any part thereof or substitution of key personnel named in the proposal without prior written approval by the BULACAN STATE UNIVERSITY.
  - (d) Poor performance by the contractor or unsatisfactory quality and/or progress of work arising from his fault or negligence as reflected in the Constructor's Performance Evaluation System ("CPES") rating sheet. In the absence of the CPES rating sheet, the existing performance monitoring system of the procuring entity shall be applied. Any of the following acts by the Contractor shall be construed as poor performance:
    - (i) Negative slippage of 15% and above within the critical path of the project due entirely to the fault or negligence of the contractor; and

- (ii) Quality of materials and workmanship not complying with the approved specifications arising from the contractor's fault or negligence.
- (e) Willful or deliberate abandonment or non-performance of the project or contract by the contractor resulting to substantial breach thereof without lawful and/or just cause.

In addition to the penalty of suspension, the performance security posted by the contractor shall also be forfeited.

## **20. Force Majeure, Release from Performance**

- 20.1. For purposes of this Contract the terms "*force majeure*" and "fortuitous event" may be used interchangeably. In this regard, a fortuitous event or *force majeure* shall be interpreted to mean an event which the Contractor could not have foreseen, or which though foreseen, was inevitable. It shall not include ordinary unfavorable weather conditions; and any other cause the effects of which could have been avoided with the exercise of reasonable diligence by the Contractor.
- 20.2. If this Contract is discontinued by an outbreak of war or by any other event entirely outside the control of either the BULACAN STATE UNIVERSITY or the Contractor, the BULACAN STATE UNIVERSITY's Representative shall certify that this Contract has been discontinued. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any Work carried out afterwards to which a commitment was made.
- 20.3. If the event continues for a period of eighty four (84) days, either party may then give notice of termination, which shall take effect twenty eight (28) days after the giving of the notice.
- 20.4. After termination, the Contractor shall be entitled to payment of the unpaid balance of the value of the Works executed and of the materials and Plant reasonably delivered to the Site, adjusted by the following:
  - (a) any sum to which the Contractor is entitled under **GCC** Clause 28;
  - (b) the cost of his suspension and demobilization;
  - (c) any sum to which the BULACAN STATE UNIVERSITY is entitled.
- 20.5. The net balance due shall be paid or repaid within a reasonable time period from the time of the notice of termination.

## **21. Resolution of Disputes**

- 21.1. If any dispute or difference of any kind whatsoever shall arise between the parties in connection with the implementation of the contract covered by the Act and this IRR, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

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

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

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

- (a) The BULACAN STATE UNIVERSITY is obligated to notify the Contractor of such suspension within seven (7) days of having received the suspension notice.
- (b) If the Contractor has not received sums due it for work already done within forty five (45) days from the time the Contractor's claim for payment has been certified by the BULACAN STATE UNIVERSITY's Representative, the Contractor may immediately issue a suspension of work notice in accordance with **GCC** Clause 45.2.

## **23. Procuring Entity's Representative's Decisions**

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

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

- 24.1. All Drawings prepared by the Contractor for the execution of the Temporary Works, are subject to prior approval by the BULACAN STATE UNIVERSITY's Representative before its use.



- 24.2. The Contractor shall be responsible for design of Temporary Works.
- 24.3. The BULACAN STATE UNIVERSITY's Representative's approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 24.4. The Contractor shall obtain approval of third parties to the design of the Temporary Works, when required by the BULACAN STATE UNIVERSITY.

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

- 25.1. When the BULACAN STATE UNIVERSITY wants the Contractor to finish before the Intended Completion Date, the BULACAN STATE UNIVERSITY's Representative will obtain priced proposals for achieving the necessary acceleration from the Contractor. If the BULACAN STATE UNIVERSITY accepts these proposals, the Intended Completion Date will be adjusted accordingly and confirmed by both the BULACAN STATE UNIVERSITY and the Contractor.
- 25.2. If the Contractor's Financial Proposals for an acceleration are accepted by the BULACAN STATE UNIVERSITY, they are incorporated in the Contract Price and treated as a Variation.

**26. Extension of the Intended Completion Date**

- 26.1. The BULACAN STATE UNIVERSITY's Representative shall extend the Intended Completion Date if a Variation is issued which makes it impossible for the Intended Completion Date to be achieved by the Contractor without taking steps to accelerate the remaining work, which would cause the Contractor to incur additional costs. No payment shall be made for any event which may warrant the extension of the Intended Completion Date.
- 26.2. The BULACAN STATE UNIVERSITY's Representative shall decide whether and by how much to extend the Intended Completion Date within twenty one (21) days of the Contractor asking the BULACAN STATE UNIVERSITY's Representative for a decision thereto after fully submitting all supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

**27. Right to Vary**

- 27.1. The BULACAN STATE UNIVERSITY's Representative with the prior approval of the BULACAN STATE UNIVERSITY may instruct Variations, up to a maximum cumulative amount of ten percent (10%) of the original contract cost.
- 27.2. Variations shall be valued as follows:
  - (a) At a lump sum price agreed between the parties;
  - (b) where appropriate, at rates in this Contract;
  - (c) in the absence of appropriate rates, the rates in this Contract shall be used as the basis for valuation; or failing which

- (d) at appropriate new rates, equal to or lower than current industry rates and to be agreed upon by both parties and approved by the Head of the BULACAN STATE UNIVERSITY.

## **28. Contractor's Right to Claim**

If the Contractor incurs cost as a result of any of the events under **GCC** Clause 13, the Contractor shall be entitled to the amount of such cost. If as a result of any of the said events, it is necessary to change the Works, this shall be dealt with as a Variation.

## **29. Dayworks**

- 29.1. Subject to **GCC** Clause 43 on Variation Order, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the BULACAN STATE UNIVERSITY's Representative has given written instructions in advance for additional work to be paid for in that way.
- 29.2. All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the BULACAN STATE UNIVERSITY's Representative. Each completed form shall be verified and signed by the BULACAN STATE UNIVERSITY's Representative within two days of the work being done.
- 29.3. The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

## **30. Early Warning**

- 30.1. The Contractor shall warn the BULACAN STATE UNIVERSITY's Representative at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The BULACAN STATE UNIVERSITY's Representative may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.
- 30.2. The Contractor shall cooperate with the BULACAN STATE UNIVERSITY's Representative in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the BULACAN STATE UNIVERSITY's Representative.

## **31. Program of Work**

- 31.1. Within the time stated in the **SCC**, the Contractor shall submit to the BULACAN STATE UNIVERSITY's Representative for approval a Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works.
- 31.2. An update of the Program of Work shall show the actual progress achieved on each activity and the effect of the progress achieved on the

timing of the remaining work, including any changes to the sequence of the activities.

- 31.3. The Contractor shall submit to the BULACAN STATE UNIVERSITY'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 BULACAN STATE UNIVERSITY's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.
- 31.4. The BULACAN STATE UNIVERSITY's Representative's approval of the Program of Work shall not alter the Contractor's obligations. The Contractor may revise the Program of Work and submit it to the BULACAN STATE UNIVERSITY's Representative again at any time. A revised Program of Work shall show the effect of any approved Variations.
- 31.5. When the Program of Work is updated, the Contractor shall provide the BULACAN STATE UNIVERSITY's Representative with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.
- 31.6. All Variations shall be included in updated Program of Work produced by the Contractor.

## **32. Management Conferences**

- 32.1. Either the BULACAN STATE UNIVERSITY's Representative or the Contractor may require the other to attend a Management Conference. The Management Conference shall review the plans for remaining work and deal with matters raised in accordance with the early warning procedure.
- 32.2. The BULACAN STATE UNIVERSITY's Representative shall record the business of Management Conferences and provide copies of the record to those attending the Conference and to the BULACAN STATE UNIVERSITY. The responsibility of the parties for actions to be taken shall be decided by the BULACAN STATE UNIVERSITY's Representative either at the Management Conference or after the Management Conference and stated in writing to all who attended the Conference.

## **33. Bill of Quantities**

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

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

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

#### **34. Instructions, Inspections and Audits**

- 34.1. The BULACAN STATE UNIVERSITY's personnel shall at all reasonable times during construction of the Work be entitled to examine, inspect, measure and test the materials and workmanship, and to check the progress of the construction.
- 34.2. If the BULACAN STATE UNIVERSITY's Representative instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no defect, the test shall be a Compensation Event.
- 34.3. The Contractor shall permit the Funding Source named in the **SCC** to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors appointed by the Funding Source, if so required by the Funding Source.

#### **35. Identifying Defects**

The Procuring Entity's Representative shall check the Contractor's work and notify the Contractor of any defects that are found. Such checking shall not affect the Contractor's responsibilities. The Procuring Entity's Representative may instruct the Contractor to search uncover defects and test any work that the Procuring Entity's Representative considers below standards and defective.

#### **36. Cost of Repairs**

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

#### **37. Correction of Defects**

- 37.1. The BULACAN STATE UNIVERSITY's Representative shall give notice to the Contractor of any defects before the end of the Defects Liability Period, which is One (1) year from project completion up to final acceptance by the BULACAN STATE UNIVERSITY's.
- 37.2. Every time notice of a defect is given, the Contractor shall correct the notified defect within the length of time specified in the BULACAN STATE UNIVERSITY's Representative's notice.
- 37.3. The Contractor shall correct the defects which he notices himself before the end of the Defects Liability Period.

- 37.4. The BULACAN STATE UNIVERSITY shall certify that all defects have been corrected. If the BULACAN STATE UNIVERSITY considers that correction of a defect is not essential, he can request the Contractor to submit a quotation for the corresponding reduction in the Contract Price. If the BULACAN STATE UNIVERSITY accepts the quotation, the corresponding change in the SCC is a Variation.

**38. Uncorrected Defects**

- 38.1. The BULACAN STATE UNIVERSITY shall give the Contractor at least fourteen (14) days' notice of his intention to use a third party to correct a Defect. If the Contractor does not correct the Defect himself within the period, the BULACAN STATE UNIVERSITY may have the Defect corrected by the third party. The cost of the correction will be deducted from the Contract Price.
- 38.2. The use of a third party to correct defects that are uncorrected by the Contractor will in no way relieve the Contractor of its liabilities and warranties under the Contract.

**39. Advance Payment**

- 39.1. The BULACAN STATE UNIVERSITY 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**.
- 39.2. The advance payment shall be made only upon the submission to and acceptance by the BULACAN STATE UNIVERSITY of an irrevocable standby letter of credit of equivalent value from a commercial bank, a bank guarantee or a surety bond callable upon demand, issued by a surety or insurance company duly licensed by the Insurance Commission and confirmed by the BULACAN STATE UNIVERSITY.
- 39.3. The advance payment shall be repaid by the Contractor by an amount equal to the percentage of the total contract price used for the advance payment.
- 39.4. The contractor may reduce his standby letter of credit or guarantee instrument by the amounts refunded by the Monthly Certificates in the advance payment.
- 39.5. The BULACAN STATE UNIVERSITY will provide an Advance Payment on the Contract Price as stipulated in the Conditions of Contract, subject to the maximum amount stated in **SCC** Clause 39.1.

**40. Progress Payments**

- 40.1. The Contractor may submit a request for payment for Work accomplished. Such request for payment shall be verified and certified by the BULACAN STATE UNIVERSITY'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.

- 40.2. The BULACAN STATE UNIVERSITY shall deduct the following from the certified gross amounts to be paid to the contractor as progress payment:
- (a) Cumulative value of the work previously certified and paid for.
  - (b) Portion of the advance payment to be recouped for the month.
  - (c) Retention money in accordance with the condition of contract.
  - (d) Amount to cover third party liabilities.
  - (e) Amount to cover uncorrected discovered defects in the works.
- 40.3. Payments shall be adjusted by deducting therefrom the amounts for advance payments and retention. The BULACAN STATE UNIVERSITY shall pay the Contractor the amounts certified by the BULACAN STATE UNIVERSITY's Representative within twenty eight (28) days from the date each certificate was issued. No payment of interest for delayed payments and adjustments shall be made by the BULACAN STATE UNIVERSITY.
- 40.4. The first progress payment may be paid by the BULACAN STATE UNIVERSITY to the Contractor provided that at least twenty percent (20%) of the work has been accomplished as certified by the BULACAN STATE UNIVERSITY's Representative.
- 40.5. Items of the Works for which a price of "0" (zero) has been entered will not be paid for by the BULACAN STATE UNIVERSITY and shall be deemed covered by other rates and prices in the Contract.

#### **41. Payment Certificates**

- 41.1. The Contractor shall submit to the BULACAN STATE UNIVERSITY's Representative monthly statements of the estimated value of the work executed less the cumulative amount certified previously.
- 41.2. The BULACAN STATE UNIVERSITY's Representative shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.
- 41.3. The value of Work executed shall:
- (a) be determined by the BULACAN STATE UNIVERSITY's Representative;
  - (b) comprise the value of the quantities of the items in the Bill of Quantities completed; and
  - (c) include the valuations of approved variations.
- 41.4. The BULACAN STATE UNIVERSITY's Representative may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

#### **42. Retention**

- 42.1. The BULACAN STATE UNIVERSITY shall retain from each payment due to the Contractor an amount equal to a percentage thereof using the rate as specified in **ITB** Sub-Clause 42.2.
- 42.2. Progress payments are subject to retention of ten percent (10%), referred to as the “retention money.” Such retention shall be based on the total amount due to the Contractor prior to any deduction and shall be retained from every progress payment until fifty percent (50%) of the value of Works, as determined by the BULACAN STATE UNIVERSITY, are completed. If, after fifty percent (50%) completion, the Work is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the ten percent (10%) retention shall again be imposed using the rate specified therefor.
- 42.3. The total “retention money” shall be due for release upon final acceptance of the Works. The Contractor may, however, request the substitution of the retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to the BULACAN STATE UNIVERSITY, provided that the project is on schedule and is satisfactorily undertaken. Otherwise, the ten (10%) percent retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of the Government shall be valid for a duration to be determined by the concerned implementing office/agency or BULACAN STATE UNIVERSITY and will answer for the purpose for which the ten (10%) percent retention is intended, *i.e.*, to cover uncorrected discovered defects and third party liabilities.
- 42.4. On completion of the whole Works, the Contractor may substitute retention money with an “on demand” Bank guarantee in a form acceptable to the BULACAN STATE UNIVERSITY.

#### **43. Variation Orders**

- 43.1. Variation Orders may be issued by the BULACAN STATE UNIVERSITY to cover any increase/decrease in quantities, including the introduction of new work items that are not included in the original contract or reclassification of work items that are either due to change of plans, design or alignment to suit actual field conditions resulting in disparity between the preconstruction plans used for purposes of bidding and the “as staked plans” or construction drawings prepared after a joint survey by the Contractor and the BULACAN STATE UNIVERSITY after award of the contract, provided that the cumulative amount of the Variation Order does not exceed ten percent (10%) of the original project cost. The addition/deletion of Works should be within the general scope of the project as bid and awarded. The scope of works shall not be reduced so as to accommodate a positive Variation Order. A Variation Order may either be in the form of a Change Order or Extra Work Order.
- 43.2. A Change Order may be issued by the BULACAN STATE UNIVERSITY to cover any increase/decrease in quantities of original Work items in the contract.
- 43.3. An Extra Work Order may be issued by the BULACAN STATE UNIVERSITY to cover the introduction of new work necessary for the completion, improvement or protection of the project which were not included as items of

Work in the original contract, such as, where there are subsurface or latent physical conditions at the site differing materially from those indicated in the contract, or where there are duly unknown physical conditions at the site of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the Work or character provided for in the contract.

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



- (d) If, after review of the plans, quantities and estimated unit cost of the items of work involved, the proper office of the BULACAN STATE UNIVERSITY empowered to review and evaluate Change Orders or Extra Work Orders recommends approval thereof, Head of the BULACAN STATE UNIVERSITY or his duly authorized representative, believing the Change Order or Extra Work Order to be in order, shall approve the same.
- (e) The timeframe for the processing of Variation Orders from the preparation up to the approval by the Head of the BULACAN STATE UNIVERSITY concerned shall not exceed thirty (30) calendar days.

#### **44. Contract Completion**

Once the project reaches an accomplishment of ninety five (95%) of the total contract amount, the BULACAN STATE UNIVERSITY may create an inspectorate team to make preliminary inspection and submit a punch-list to the Contractor in preparation for the final turnover of the project. Said punch-list will contain, among others, the remaining Works, Work deficiencies for necessary corrections, and the specific duration/time to fully complete the project considering the approved remaining contract time. This, however, shall not preclude the claim of the BULACAN STATE UNIVERSITY for liquidated damages.

#### **45. Suspension of Work**

- 45.1. The BULACAN STATE UNIVERSITY shall have the authority to suspend the work wholly or partly by written order for such period as may be deemed necessary, due to *force majeure* or any fortuitous events or for failure on the part of the Contractor to correct bad conditions which are unsafe for workers or for the general public, to carry out valid orders given by the BULACAN STATE UNIVERSITY or to perform any provisions of the contract, or due to adjustment of plans to suit field conditions as found necessary during construction. The Contractor shall immediately comply with such order to suspend the work wholly or partly.
- 45.2. The Contractor or its duly authorized representative shall have the right to suspend work operation on any or all projects/activities along the critical path of activities after fifteen (15) calendar days from date of receipt of written notice from the Contractor to the district engineer/regional director/consultant or equivalent official, as the case may be, due to the following:
  - (a) There exist right-of-way problems which prohibit the Contractor from performing work in accordance with the approved construction schedule.
  - (b) Requisite construction plans which must be owner-furnished are not issued to the contractor precluding any work called for by such plans.
  - (c) Peace and order conditions make it extremely dangerous, if not possible, to work. However, this condition must be certified in writing by the Philippine National Police (PNP) station which has responsibility over the affected area and confirmed by the Department of Interior and Local Government (DILG) Regional Director.

- (d) There is failure on the part of the BULACAN STATE UNIVERSITY to deliver government-furnished materials and equipment as stipulated in the contract.
  - (e) Delay in the payment of Contractor's claim for progress billing beyond forty-five (45) calendar days from the time the Contractor's claim has been certified to by the BULACAN STATE UNIVERSITY's authorized representative that the documents are complete unless there are justifiable reasons thereof which shall be communicated in writing to the Contractor.
- 45.3. In case of total suspension, or suspension of activities along the critical path, which is not due to any fault of the Contractor, the elapsed time between the effective order of suspending operation and the order to resume work shall be allowed the Contractor by adjusting the contract time accordingly.

#### **46. Payment on Termination**

- 46.1. If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the BULACAN STATE UNIVERSITY's Representative shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as indicated in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the BULACAN STATE UNIVERSITY exceeds any payment due to the Contractor, the difference shall be a debt payable to the BULACAN STATE UNIVERSITY.
- 46.2. If the Contract is terminated for the BULACAN STATE UNIVERSITY's convenience or because of a fundamental breach of Contract by the BULACAN STATE UNIVERSITY, the BULACAN STATE UNIVERSITY's Representative shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.
- 46.3. The net balance due shall be paid or repaid within twenty eight (28) days from the notice of termination.
- 46.4. If the Contractor has terminated the Contract under **GCC** Clauses 17 or 18, the BULACAN STATE UNIVERSITY shall promptly return the Performance Security to the Contractor.

#### **47. Extension of Contract Time**

- 47.1. Should the amount of additional work of any kind or other special circumstances of any kind whatsoever occur such as to fairly entitle the contractor to an extension of contract time, the BULACAN STATE UNIVERSITY shall determine the amount of such extension; provided that the BULACAN STATE UNIVERSITY is not bound to take into account any claim for an extension of time unless the Contractor has, prior to the expiration of the contract time and within thirty (30) calendar days after such work has been commenced or after the circumstances leading to such claim have

arisen, delivered to the BULACAN STATE UNIVERSITY notices in order that it could have investigated them at that time. Failure to provide such notice shall constitute a waiver by the Contractor of any claim. Upon receipt of full and detailed particulars, the BULACAN STATE UNIVERSITY shall examine the facts and extent of the delay and shall extend the contract time completing the contract work when, in the BULACAN STATE UNIVERSITY's opinion, the findings of facts justify an extension.

- 47.2. No extension of contract time shall be granted the Contractor due to (a) ordinary unfavorable weather conditions and (b) inexcusable failure or negligence of Contractor to provide the required equipment, supplies or materials.
- 47.3. Extension of contract time may be granted only when the affected activities fall within the critical path of the PERT/CPM network.
- 47.4. No extension of contract time shall be granted when the reason given to support the request for extension was already considered in the determination of the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection.
- 47.5. Extension of contract time shall be granted for rainy/unworkable days considered unfavorable for the prosecution of the works at the site, based on the actual conditions obtained at the site, in excess of the number of rainy/unworkable days pre-determined by the BULACAN STATE UNIVERSITY in relation to the original contract time during the conduct of detailed engineering and in the preparation of the contract documents as agreed upon by the parties before contract perfection, and/or for equivalent period of delay due to major calamities such as exceptionally destructive typhoons, floods and earthquakes, and epidemics, and for causes such as non-delivery on time of materials, working drawings, or written information to be furnished by the BULACAN STATE UNIVERSITY, non-acquisition of permit to enter private properties within the right-of-way resulting in complete paralyzation of construction activities, and other meritorious causes as determined by the BULACAN STATE UNIVERSITY's Representative and approved by the Head of the BULACAN STATE UNIVERSITY. Shortage of construction materials, general labor strikes, and peace and order problems that disrupt construction operations through no fault of the Contractor may be considered as additional grounds for extension of contract time provided they are publicly felt and certified by appropriate government agencies such as DTI, DOLE, DILG, and DND, among others. The written consent of bondsmen must be attached to any request of the Contractor for extension of contract time and submitted to the BULACAN STATE UNIVERSITY for consideration and the validity of the Performance Security shall be correspondingly extended.

#### **48. Price Adjustment**

Except for extraordinary circumstances as determined by NEDA and approved by the GPPB, no price adjustment shall be allowed. Nevertheless, in cases where the cost of the awarded contract is affected by any applicable new laws, ordinances, regulations, or other acts of the GOP, promulgated after the date of bid opening, a

contract price adjustment shall be made or appropriate relief shall be applied on a no loss-no gain basis.

**49. Completion**

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

**50. Taking Over**

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

**51. Operating and Maintenance Manuals**

51.1. If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the **SCC**.

51.2. If the Contractor does not supply the Drawings and/or manuals by the dates stated in the **SCC**, or they do not receive the BULACAN STATE UNIVERSITY's Representative's approval, the BULACAN STATE UNIVERSITY's Representative shall withhold the amount stated in the **SCC** from payments due to the Contractor.

## Special Conditions of Contract

GCC Clause	
1.16	The <b>Intended Completion Date</b> is <i>One Hundred Fifty (150) calendar days</i> .
1.21	The <b>Procuring Entity</b> is <b>BULACAN STATE UNIVERSITY</b> .
1.22	The <b>BULACAN STATE UNIVERSITY's Representative</b> is <b>DR. MARIANO C. DE JESUS, University President</b> .
1.23	The <b>Site</b> is located <i>at the Bulacan State University-Main Campus, City of Malolos, Bulacan</i> .
1.27	The <b>Start Date</b> is <i>Within ten (10) calendar days from receipt of Notice to Proceed (NTP)</i> .
1.30	The <b>Works</b> consist of Preparing the Site, Concrete and Masonry Works, Metal Works, Electrical Works, Architectural Finishes, Cleaning of Debris and Salvage Materials within the Construction Site during and after the construction period.
5.1	The BULACAN STATE UNIVERSITY shall give possession of all parts of the Site to the Contractor <b>from receipt of Notice to Proceed</b> .
6.3	<b>a. Construction safety and health program for this project.</b> <b>b. Contractor's All Risk Insurance Policy</b> <b>c. Approved Quality Control Program</b>
6.5	The Contractor shall employ the following <b>Key Personnel</b> :  <i>[List key personnel by name and designation]</i>  <i>Registered Civil Engineer (Supervising Site Engineer to be present throughout the duration of the project) (with Valid PRC License)</i>
7.4(c)	No further instructions.
7.7	No further instructions.
8.1	No further instructions.
10	<b>Site Inspection Certificate.</b>
12.3	No further instructions.
12.5	No further instructions.
13	<i>If the Contractor is a joint venture, "All partners to the joint venture shall be jointly and severally liable to the BULACAN STATE UNIVERSITY."</i>
18.3(h)(i)	No further instructions.
21.2	No further instructions.

29.1	No further instructions.
31.1	The Contractor shall submit the Program of Work to the BULACAN STATE UNIVERSITY's Representative within <b><u>ten (10) calendar days</u></b> of delivery of the Letter of Acceptance.
31.3	No further instructions.
34.3	The Funding Source is Corporate Budget (General Fund).
39.1	The amount of the <b><u>advance payment is not more than 15% of the Contract Price.</u></b>
40.1	Materials and equipment delivered on the site and completely put in place shall be included for payment.
51.1	The date by which surveyed location plan is required <b><u>within ten (10) calendar days after project completion.</u></b>
51.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is <b><u>ten percent (10%) of the contract price.</u></b>

# CONSTRUCTION SPECIFICATIONS

<b>PROJECT TITLE</b>	<b>PROPOSED BSU SCIENCE RESEARCH &amp; LEARNING CENTER</b>
<b>LOCATION</b>	<b>Bulacan State University Main Campus</b>
<b>OWNER</b>	<b>Bulacan State University</b>

Prepared by:

**MA. VICTORIA V. UMALI**  
Civil Engineer, PMO

Submitted by:

**AR. MA. SATURNINA C. PARUNGAO**  
Director, PMO

Approved by:

**DR. MARIANO C. DE JESUS**  
BulSU - PRESIDENT

Conforme:

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CONTRACTOR

## **DIVISION 1.0          GENERAL CONDITIONS**

### **PART 1.0 GENERAL**

**1.0.    SCOPE OF WORK:** The work covered under this Contract is for the construction of the Proposed BSU Science Research & Learning Center at Bulacan State University – Main Campus, City of Malolos, Bulacan. It consists of the furnishing all materials, labor, equipment, transportation, incidentals, facilities, and superintendence necessary to complete the project In accordance with true intent these Specifications and Contract Drawings.

**2.0.    PLANS AND SPECIFICATIONS:** The Contractor shall be responsible for carefully examining, comparing and verifying the data furnished by the Plans and Specifications. In case of obscurity or discrepancy in the Plans and Specifications, the Contractor shall submit the matter to the Project Management Office of the Bulacan State University for the proper explanation or necessary correction, before any adjustment shall be made. Any adjustment by the Contractor without such determination shall be at his risk and expense.

Omitted or wrongly described details of work, which are manifestly necessary to carry out the true intent of the drawings and specifications, shall be performed as if fully and correctly set forth and described in the drawings and specifications.

The Owner may, from time to time, make changes in the specifications and construction drawings. However, if the cost to the Contractor shall be materially increased by such change, the Owner shall pay the Contractor for the reasonable cost in accordance with the changes.

**2.0    LAWS TO BE OBSERVED:** The contractor shall comply with National Building Code of the Philippines, National Structural Code of the Philippines, Fire Code of the Philippines, Plumbing Code of the Philippines as well as Local Rules and Regulations of the City of Malolos, Bulacan. This includes safety practices especially during construction process. The Contractor or those engaged thereon shall obtain all necessary licenses and permits and pay all taxes or fees, which may due to the local and/or National Government in connection with the prosecution of the work. He shall also be responsible for all damages to persons or property that may occur.

**3.0    SIGNBOARDS.** The Contractor shall provide signboards with complete details of the project. Sizes are subject for the approval from PMO.

### **PART 2.0          MATERIALS**

**2.1          MATERIALS:** Unless otherwise specified, all materials shall be new and free from defects and imperfections. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall be performed in the best and most acceptable manner in strict accordance with the requirements of the Plans and Specifications. Preference will be given to articles or materials that are locally manufactured, conditions of quality and price being equal.



- 2.2            **SAMPLES AND INFORMATION ON MATERIALS:** When required by the Specifications, or when called for by the Architect, the Contractor shall furnish, for approval, full Information and satisfactory evidence as to the kind and quality of materials or articles he will Incorporate in the work. The Contractor shall furnish, for Architect's and Owner's approval, all samples when so directed. The work shall be in accordance with approved samples. Materials and articles installed or used without such approval shall be at the risk of subsequent rejection.

Any failure on the part of the Contractor to conform or use materials that are not specified herein shall be under subsequent rejection. Any alteration or revision of material usage without approval from the Architect shall make the Contractor responsible and liable in terms of guarantee, workmanship and defects.

### **PART 3.0        WORKMANSHIP**

- 3.1            **WORKMANSHIP:** Workmanship shall be in accordance with the best standard practices and all operations required under any and all parts of the Specifications shall be undertaken In a neat, workmanlike manner. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.

Any alteration or revision on the execution of Drawings without approval from the Architect shall be under subsequent rejection and shall make the Contractor responsible and liable for any workmanship and execution defects.

Defective workmanship shall be remedied by the Contractor, at his expense. He shall not be entitled to any payment hereunder until defective workmanship has been remedied.

- 3.2            **TEMPORARY FACILITIES:** The Contractor shall furnish all temporary lights and power and shall pay all expenses in connection therewith. Furthermore, the Contractor shall provide and pay for all water expenses for building purposes that are required by all trades. He shall remove all connections and appliances connected there with prior to the completion of the Contract and leave the premises perfectly clean.
- 3.3            **PROTECTION OF WORK AND OWNER'S PROPERTY:** The Contractor shall put up safety measures and continuously maintain adequate protection of all his work from damage and shall protect the Owners property, as well as all materials furnished and delivered to him by the Owner. He shall make good any such damage, injury or loss, except such as may be caused by agents or employees of the Owner, or due to causes considered as an Act of God.

### **PART 4.0        SUPERVISION AND INSPECTION**

- 4.1            **AUTHORIZED REPRESENTATIVE:** Whenever the Contractor is not at the site, orders maybe given by the Owner to his authorized representative and shall be accepted and complied to by the superintendent or foreman of the Contractor.
- 4.2            **INSPECTION OF WORK:** The Architect or Owner shall, at all times, have access to the work whenever it is in preparation or progress and the Contractor shall provide

facilities for such access for inspection. The manner of work and all materials and equipment used therein shall be subject to inspection, tests, and approval of the Owner.

4.3 CONSTANT SUPERVISION. The Contractor shall ensure that the project will have constant supervision by a competent superintendent, who shall be present where construction is being carried on at all times during the working hours. Existing condition of the work site shall be documented and photos shall be taken before commence of the work to ensure such status, any damages on the areas due to on-going work shall be refurbished at the Contractor's expense.

4.4 DISPUTES: The Architect shall, within a reasonable time, make decision on all claims of the Owner or Contractor and on all matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

Except as otherwise specifically provided in this Contract, all disputes concerning questions of fact arising under this contract shall be decided by the Architect, whose decisions shall be final and conclusive upon the parties as to questions of fact.

4.4 AS BUILT PLANS. Three sets of "As-Built Plans" of the project concerned duly signed and sealed by the Engineer-in-charge of construction should be submitted as a requirement for the final acceptance of the work. It should be properly drawn indicating all the specifications, layouts, tables and necessary data. An initial layout should be submitted on A3 paper for checking and approval of PMO. Final "As-Built plans", both soft and hard copies, three sets on A3 and a CD copy, respectively.

4.5 CLEAN UP: The Contractor, prior to the turn over of the work to the Owner, shall remove any excess materials, waste, debris, rubbish, and all construction and installation equipment and tools from the premises before the final acceptance of the work.

**DIVISION 2.0 SITEWORKS**  
**SECTION 2.01 EARTHWORK**

**PART 1.0 GENERAL**

1.1 WORK INCLUDED: Work in this section includes the demolition, complete clearing of site, general site grading, excavating, filling and backfilling.

**PART 2.0 DEMOLITION WORK AND CLEARING THE SITE**

3.1 Demolition – The Contractor shall inspect and investigate the existing structure to be demolished and apply the most appropriate and efficient technique to put down the structure and clear the site. The Contractor shall ensure safety during the entire demolition process.

3.2 The building site shall be compacted (by flooding/wetting, tamping, or rolling), leveled according to the plans, and cleared of rubbish, roots, and other perishable and objectionable matters to the suitable subgrade.

- 3.3 All such unsuitable materials shall be removed from the building site and spread uniformly over the areas adjacent to the proposed building, or otherwise disposed of as may be directed by the Engineer/Architect-in-charge of the Construction.

### **PART 3.0 STAKING – OUT THE BUILDING LINES**

- 3.1 The building lines shall be staked out and all lines and grades shown in the drawing should be established, after which the approval of the Engineer/Architect-in-charge of the Construction shall be secured before any excavation work commenced.
- 3.2 Batter boards and reference marks shall be erected at such places where they will not be disturbed by the excavation of the building.

### **PART 4.0 EXCAVATION, BACKFILLING AND COMPACTION**

#### **4.1 EXCAVATION**

- 4.1.1 Excavation shall be made to the dimensions and elevations and grade indicated in the drawings. Where the building site is covered with any kind of fill, the excavation for footings shall be made deeper until the stratum for safe bearing capacity of soil is reached. Should unsuitable bearings be encountered, elevations shall be carried to such depths as will be directed by the architect, and the contract price shall be adjusted accordingly.
- 4.1.2 In the event that it is required to remove unsatisfactory material to a greater depth than specified, an adjustment in the contract price will be made in accordance with the contract. Should excavations through error be carried to such depth or size required, such additional depth or size required, such additional works shall be at the Contractor's expense.
- 4.1.3 Excavation shall extend a sufficient distance from wall footings to allow forms installation of services and for inspection.
- 4.1.4 Surplus satisfactory excavated material not required for fill or embankment shall be disposed of to the designated waste or spoil areas. Unsatisfactory excavated material shall be disposed of in designated wastes or spoil areas. Excavation and filling shall be performed in manner and sequence that will provide proper drainage at all times.

- 4.2 **CUTTING, FILLING AND GRADING.** Cutting, filling and grading will be done to bring all areas of the respective surfacing as fixed by the finished grade.

- 4.3 **COMPACTION.** Compaction shall be by rolling with approved tamping rollers, vibratory rollers, pneumatic-tired rollers, three-wheel power rollers, or other approved equipment well suited to the particular soil being compacted. Material shall be moistened or aerated as necessary to provide the moisture content that will facilitate obtaining the specified compaction with the equipment utilized.

#### **4.4 SUB-GRADE PREPARATION**

- a. **CONSTRUCTION.** Sub-grade shall be shaped to line, grade, and cross-section, and compacted as specified. This shall be done by plowing, disking, and moistening or aerating. Low areas resulting from removal of unsatisfactory material or excavation of rock shall be brought up to required grade with satisfactory materials, and entire sub-grade shaped. Elevation of finish sub-grade shall conform to elevations shown.

- b. **PROTECTION.** During construction, any excavation shall be kept shaped and drained. Ditches and drains shall be maintained in such manner as to drain effectively at all times. Graded areas shall be protected against action of the elements prior to acceptance of the work. Settlement or washing that may have occurred shall be repaired and grades shall be re-established to the required elevations and slopes immediately prior to installation of paving.

## **SECTION 2.02 SOIL TREATMENT**

### **PART 1.0 GENERAL**

- 1.1 **WORK INCLUDED :** This section covers the furnishing of all materials, labor and equipment necessary to perform the completion of ground and soil treatment for termite control.
- 1.2 **QUALIFICATION:** Specified work shall be done only by licensed and certified pesticide applicators. Applicator shall be familiar with all the works Involved and shall hire only skilled personnel familiar with soil and ground treatment works.
- 1.3 **GUARANTEE:** The applicator shall give a certificate of guarantee for a minimum of five years to a maximum of 20 years. Soil poisoning treatment shall be provided to prevent subterranean termites from attacking the building or its contents for a period of not less than five (5) years and a maximum of twenty (20) years guarantee.

### **PART 2.0 PRODUCT**

- 2.1 **MATERIAL:** Material shall be an organic phosphate insecticide, which acts primarily by contact activity and as a stomach-poison. It shall be biologically active against many species of insects and other arthropods that are plant, animal and human health pests, including termites, and it shall be an ecologically safe product.

### **PART 3.0 EXECUTION**

- 3.1 Pesticide shall be applied by or under the direct supervision of a certified pesticide applicator.
- 3.2 **Pre-Construction Treatment:** 2 liters pesticide/ 100 liters of water.
- A. Apply an overall treatment under entire surface of floor slab, including entrance platform, at the rate of 4 liters solution per square meter. If fill is washed gravel or other coarse material, apply at the rate of 7 liters solution per square meter.
- B. Hollow blocks foundation or voids of masonry should be treated to make a continuous chemical barrier in the voids. Apply at the rate of 7 liters per 3 linear meters.
- For crawl spaces, apply at the rate of 15 liters solution per linear meters per 30 cm. of depth from grade to bottom of foundation. Treat both sides of foundation and around all piers and pipes.
- 3.3 **Post-Construction Treatment:** 2 liters/100 liters of water
- Apply 5 liters solution per linear meter of trenches 1 to 2 feet deep around

building being treated. Treat soil for back-fill and soil under and around porches and piers. Cover the treated soil with a layer of untreated soil or other suitable barrier like polyethylene sheeting.

3.4 Re-treatment

- A. Re-treatment for subterranean termites should be made when there is evidence of re-infestation subsequent to the initial treatment, or when there has been a disruption of the chemical barrier in the soil due to construction, excavation, landscaping, etc.
- B. Re-treatment may be made to critical areas or wood structures exposed to sunlight and other weather elements In accordance with prescribed application techniques. This application should be made as a spot treatment to these areas as necessary.

**DIVISION 3.0 CONCRETE**

**SECTION 3.01 CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

1.1 SCOPE. This section covers cast-in-place concrete, complete.

1.2 DELIVERY AND STORAGE

- a. CEMENT. Cement shall be stored immediately upon receipt at the site of the work in a suitable weatherproof and airtight structure and elevated above the ground to prevent the absorption of moisture. Bags shall be stacked close together to reduce circulation of air, but shall not be stacked against outside walls. The manner of storage shall permit easy access for inspection and identification of each shipment.
- b. AGGREGATES. Aggregates shall be stored in areas covered with tightly laid wood planks, sheet metal or other hard and clean surface, and in a manner that will preclude the inclusion of foreign materials. Aggregates of different sizes shall be stored in separate piles.
- c. REINFORCEMENT. Reinforcement shall be stored in such a manner that will prevent excessive rusting or coating with grease, oil, dirt, and other objectionable materials. Storage shall be in separate piles or racks to avoid confusion and loss of identification after bundles have been broken.

**PART 2.0 MATERIALS**

2.1 CEMENT Portland cement shall conform to to the requirement of the specifications and tests for Portland Cement Type I (ASTM C150) or its equivalent more readily available in the locality. Use only one brand for each type of cement.

2.2 REINFORCEMENT. All reinforcing steel bars, except No. 2, shall be deformed. The manufacturer shall submit certification of compliance to

- this specification prior to the delivery of these materials.
- 2.3 FINE AGGREGATES. The fine aggregates for concrete shall consist of natural sand, or inert materials with similar characteristics having clean, hard, strong, durable grains, and free from injurious amount of dust, organic matters or loam and shall not contain more than 5% clay.
- 2.4 COARSE AGGREGATES. Coarse aggregates shall be hard, durable, uncoated gravel, crushed gravel, or a combination thereof. . Sizes of coarse aggregates to be used shall vary from 20 mm to 40 mm (3/4" to 1-1/2").
- 2.5 WATER. Mixing water for concrete shall be free from injurious amounts of oils, acids, alkalis, salts, or other substances that may be deleterious to concrete or steel and shall be reasonably clear and clean.
- 2.6 CURING MATERIALS. Materials shall conform to one of the following unless otherwise designated:
- a. Polyethylene sheeting for curing, 6 mils minimum thickness, clear.
  - b. Waterproof Kraft paper or polyethylene-coated waterproof paper for concrete curing shall be of commercial quality.
  - c. Burlap, plain or polyethylene-coated burlap shall be of commercial quality.
- 2.7 FORMS COATING shall be non-staining type mineral oil.

## **PART 3.0**

### **FORMS**

- 3.1 GENERAL REQUIREMENTS. Forms shall be provided for all concrete. Forms shall be set true to line and grade and maintained as to ensure completed work within the allowable tolerance specified, and shall be mortar-tight. The contractor shall be responsible for the adequacy of forms and form support. Wire ties shall not be used where the concrete surface will be exposed to weathering and where discoloration will be exposed. All formwork shall be provided with adequate clean-out openings to permit inspection and easy cleaning after all reinforcement has been placed. Where forms for continuous surfaces are placed in successive units, these shall be fitted over the completed surface to obtain accurate alignment of the surface and to prevent leakage of mortar. Panel forms shall be constructed to provide tight joints between panels. All forms shall be constructed so that they can be removed without damaging the concrete. All exposed joints, edges and external corners shall be chamfered a minimum of 20 mm unless specified otherwise hereinafter.
- 3.2 MATERIALS FOR FORMS. Forms shall be of wood, plywood, steel, or other suitable materials. Wood forms for surfaces exposed to view in the finished structure and requiring a standard finish, shall be plywood. For unexposed surface, undressed square-edged lumber may be used. Forms for surfaces requiring special finishes shall be plywood or hard-pressed fiber board not less than 12 mm thick. Surfaces of steel forms shall be free from irregularities, dents, and sags.
- 3.3 COATING. Before placing the concrete, the contact surfaces of forms shall be coated with non-staining mineral oil or suitable non-staining

form coating compound, or shall be given two coats of nitrocellulose lacquer, except as specified otherwise. Mineral oil shall be used on forms for surfaces, which are to be painted. For surfaces not exposed to view in the finished structure and when temperature is above 40 degrees F, sheeting may be wetted thoroughly with clean water.

- 3.4 TOLERANCE AND VARIATIONS. The contractor shall set and maintain concrete forms to insure that after removal of the forms and prior to patching and finishing, no portion of the concrete work will exceed any of the tolerances specified

#### **PART 4 CLASSES OF CONCRETE**

- 4.1 STRENGTH REQUIREMENTS. Concrete of the various classes, if not indicated in the drawings and as specified under other sections, shall be proportioned and mixed for the following strengths:

CLASS	SPECIFIED COMPRESSIVE STRENGTH, 28 Days, Psi
A	3,000
B	2,500

*Concrete made with high-early-strength cement shall have a 7-day strength equal to the specified 28-day strength for concrete of the class specified made with type I or II Portland cement.*

- 4.2 USAGE. Concrete of the various classes shall be used as follows:  
Class A concrete - for footings, columns, beams/girders, slab and septic vault cover. Class A concrete shall be a mixture of 1 part cement, 2 parts fine aggregates and 4 parts coarse aggregates by volume, plus enough clean water to make the mixture into a pliable paste

Class B concrete - for all slab on fill, curbs, ground gutters, and concrete hollow blocks footing. Class B concrete shall be a mixture of 1 part cement, 2-1/2 parts fine aggregates and 5 parts of coarse aggregates by volume, plus enough clean water to make the mixture into a pliable paste.

#### **PART 5 PROPORTIONING, MEASUREMENT AND MIXING**

- 5.1 CONCRETE DESIGN MIX. Concrete mixes except otherwise indicated shall be designed by the contractor. The proportions shall be changed whenever necessary to maintain the workability, strength, and standard of quality core the concrete covered by these specifications, and to meet the varying conditions encountered during construction. Test for slump and unit weight shall be performed under the supervision of the Construction Architect/Engineer.

- 5.2 SLUMP shall be determined in conformance with ASTM C 143, and shall be within the following limits, provided the required strength is obtained:

STRUCTURAL ELEMENT	SLUMP FOR VIBRATED CONCRETE	
	Minimum	Maximum
Walls, columns, and grade beams, 250 mm. Maximum thickness	75 mm.	100 mm.
Other construction	50 mm.	75 mm.

- 5.3 PROPORTIONING OF MATERIALS shall be accomplished by weighing, except as otherwise provided herein. In urgent situation, volumetric proportioning may be used temporarily, if permitted by the Construction Architect/Engineer, who will stipulate the length of the period during which volumetric proportioning may be used. The contractor shall furnish the necessary equipment and shall establish accurate procedures for determining the quantities of free moisture in the aggregates, the true volume of the fine aggregate if volumetric proportioning is used, and the air content of the freshly mixed concrete if air-entrained concrete is used. Such procedures are subject to the approval of the Construction Architect/Engineer. Moisture, volumetric and air determinations shall be made at intervals as directed by the Construction Architect/ Engineer and as specified hereinafter under field testing requirements. Allowable tolerances for measuring cement and water shall be one (1%) percent; for aggregates, two (2%) percent; and three (3%) percent for mixtures.
- 5.4 WEIGHT MEASUREMENT. The fine aggregate and each size of coarse aggregate shall be weighed separately. Cement in standard packages (bags) need not be weighed, but bulk cement or fractional packages shall be weighed on a scale separate from that used for weighing other materials.
- 5.5 VOLUMETRIC MEASUREMENT. The weight proportions shall be transposed into equivalent volumetric proportions by weighing representative samples of the aggregates in the conditions in which they will be measured and in accordance with ASTM C29. In determining the true volume of the fine aggregate, allowance shall be made for the bulking effect from the moisture contained therein. Suitable allowances shall also be made for variations in the moisture conditions of the aggregates.
- 5.6 MIXING. All concrete shall be machine-mixed. In cases of emergency or small batches, the mixing may be done by hand if so authorized by the Construction Architect/ Engineer. Mixing shall begin within 30 minutes after the cement has been added to the aggregates. The time of mixing after all cement and aggregates are in the mixer drum shall be not less than one minute for mixers having a capacity of one cubic yard or less; for mixers of larger capacities, the minimum time shall be increased 15 second for each additional cubic yard. A reduction in the aforementioned mixing time shall be permitted if mixer performance tests made at the contractor's option and at his expense, indicate adequate mixing with the



reduced time. All mixing water shall be introduced in the drum before one-fourth of the mixing time has elapsed. The entire content of the mixer drum shall be discharged before recharging. The time elapsing between the introduction of the mixing water to the cement and aggregates or the cement to the aggregates and placing of the concrete in final position in the forms shall not exceed 60 minutes, if the air temperature is less than 85 degrees Fahrenheit. If the air temperature is equal or greater than 85 degrees Fahrenheit, time elapsed shall not exceed 45 minutes. The re-tampering of concrete, i.e., re-mixing with or without additional cement, aggregate or water, will not be permitted.

## **PART 6                    PLACING    REINFORCEMENTS    AND    MISCELLANEOUS MATERIALS**

- 6.1                    GENERAL REQUIREMENTS. All reinforcement bars, stirrups, hanger bars, wire fabric, spiral, and other reinforcing materials shall be provided as indicated on the drawing or required by this specification, together with all necessary wire ties, chairs, spaces, supports and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from rust, scales, oil, grease, clay, and other coatings, and foreign substances that would reduce or destroy the bond. Rusting of reinforcement shall not be a basis of rejection, provided that the rusting has not reduced the effective cross sectional area of the reinforcement to the extent that the strength is reduced beyond specified value. Heavy, thick rust or loose, flaky rust shall be removed by rubbing with burlap or other approved method, prior to placing. Reinforcement, which has bends not shown on the project drawings, approved shop drawings, or is reduced in section by rusting such that its weight is not within permissible ASTM tolerances, shall not be used. All reinforcement shall be supported and wired together to prevent displacement by construction loads or by the placing of concrete. Unless directed otherwise by the Construction Architect/Engineer, reinforcement shall not be bent after being partially embedded in hardened concrete. Where cover over reinforcing steel is not specified it shall be in accordance with ACI 318.
- 6.2                    PLACING. Reinforcement shall be placed accurately and secured. It shall be supported by suitable chairs or spacers or by metal hangers. On the ground, and where otherwise subject to corrosion, concrete or other suitable non-corroding material shall be used for supporting reinforcement. Where the concrete surface will be exposed to the weather in the finished structure or where rust would impair the appearance or finish of the structure, all reinforcement supports, within specified concrete cover, shall be galvanized or made of a suitable non-corroding material.
- 6.3                    SPLICING OF REINFORCEMENT. Splicing of reinforcement shall be in accordance with ACI 318, except as indicated otherwise or modified herein. Where splices in addition to those indicated on the drawings are

necessary, they shall be approved by the Construction Architect/Engineer prior to their use. Splices shall not be used in grade beams and slabs at points of maximum stress. Except as indicated or specified otherwise herein, in lieu of lapping, but splicing of reinforcement may be permitted provided the splicing material, equal or greater in cross sectional area to the spliced steel, shall possess a minimum of 125 percent of the yield strength or 90 percent of the ultimate strength of the reinforcing steel, whichever is the greater. But splicing shall preferably use over lapping for bar sizes No. 11 and above.

6.4 MOVING REINFORCING STEEL. All placement or movement of reinforcing steel after placement to positions other than that indicated or specified shall be subject to the approval of the Construction Architect/Engineer.

6.5 SETTING MISCELLANEOUS MATERIAL. Anchors and bolts, including, but not limited to those for machine and equipment bases, frames or edgings, hangers and inserts, door bucks, pipe supports, pipe sleeves, metal ties, conduits, drains and all other materials in connection with concrete construction, shall, where practicable, be placed and secured in position when the concrete is placed. Anchor bolts for machines shall be set to templates, plumbed carefully and checked for location and elevation with an instrument, and shall be held in position rigidly to prevent displacement while concrete is being placed.

## **PART 7 CONVEYING AND PLACING CONCRETE**

7.1 CONVEYING. Concrete shall be conveyed from the mixer to the forms as rapidly as practicable by proper methods, avoiding segregation or loss of ingredients. It shall be deposited as nearly as practicable in its final positions in the forms. At any point in the conveying, the free vertical drop of the concrete shall not exceed 91 cm. Chuting will be permitted only where the concrete is deposited into a hopper before it is placed in the forms. Conveying equipment shall be cleaned thoroughly before each run. All concrete shall be deposited as soon as practicable after the forms and reinforcements have been inspected and approved by the Construction Architect/Engineer. Concrete, which has been segregated in conveying, shall be removed and disposed of as directed by the Construction Architect/Engineer.

7.2 PLACING CONCRETE. No concrete shall be placed after there is evidence of initial set. All concrete placing equipment and methods shall be subject to approval of the Construction Architect/Engineer. Concrete placement will not be permitted when weather conditions prevent proper placement and consolidation. Before placing concrete on porous sub-grades, they shall be dampened as directed by the Construction Architect/Engineer. Forms shall be clean and free from dirt, construction debris and water. Concrete shall be deposited in horizontal layers approximately 31 to 51 cm deep in a manner to preclude the formation of cold joints between successive layers. The method of depositing

concrete shall be such as to avoid displacing the reinforcement and segregating the aggregate. Concrete shall be worked about the reinforcement and embedded fixtures and avoid overworking which may result in segregation. On the bottom of slabs, the girders where the congestion of steel near the forms makes placing difficult, a layer of mortar equal to the approved slump shall be deposited to cover the surface to a depth of approximately 25 mm before placing the concrete. Water, which accumulates on the surface of the concrete during placing, shall be removed by absorption with porous materials in a manner that prevents removal of cement. Pumping of concrete through aluminum pipe shall not be permitted.

- 7.3 VIBRATION. All concrete, except for concrete slabs 100 mm or less in depth, shall be compacted using high frequency, internal, mechanical vibrating equipment supplemented by hand spading and tamping. Concrete slabs 100 mm or less in depth shall be consolidated by wood tamper, and spading and settling with a heavy leveling straight edge. Vibrator shall be designated to operate with vibratory element submerged in the concrete and shall have a frequency of not less than 6,000 impulses per minute when submerged. The vibrating equipment shall be adequate at all times in number units' power of each unit to consolidate the concrete properly. Vibration of forms and reinforcement shall not be employed except when authorized specifically the Construction Architect/Engineer. Vibrators shall not be used to transport the concrete in the forms. Vibration shall be discontinued when the concrete has been compacted thoroughly and ceased to decrease in volume.

- 7.4 CONSTRUCTION JOINTS. Joints not shown on the drawings shall be made and located so as to least impair the strength of the structure and shall be subject to approval of the Construction Architect/Engineer. In general, they shall be located near the middle of the spans of slabs, grade beams. Horizontal joints in walls shall be at the underside of floor, slabs, grade beams, or girders and at the top of footings or grade slabs. Grade beams, brackets, and drop panels shall be placed at the same time as slabs. Joints shall be perpendicular to the main reinforcement. All construction joints in contact with the grade or earth shall be provided with an approved type rubber or PVC water-stop to minimize water leakage. Water-stop shall be installed so as to form a continuous watertight diaphragm. Joints and splices shall be vulcanized or heat-sealed and as recommended by the manufacturer as approved.

- a. Reinforcement in construction joints. All reinforcing steel shall be continued across joints. Keys and inclined dowels shall be provided as directed by the Construction Architect/Engineer. Longitudinal keys at least 38 mm deep shall be provided in all joints in walls and between walls and slabs or footings.

## **PART 8**

### **SLABS ON GRADE**

All slabs on ground shall not be less than 0.10 m. thick reinforced

with 10mm diameter round deformed bars laid on 0.40m. on center both ways. All slabs-on-fill shall be laid on 0.05 m. thick sand cushion and 0.05 m. thick gravel bed on thoroughly compacted earthfill.

## **PART 9**

### **SURFACE FINISH (EXCEPT FLOOR FINISH)**

#### **9.1**

**GENERAL REQUIREMENTS.** All formed surfaces shall be repaired by patching with cement mortar. Cement mortar for patching shall be the same composition as that used in the concrete, except that for exposed surfaces' part of the cement shall be white Portland cement to provide a finish color matching the surrounding concrete. Patching shall be done as soon as the forms are removed area to surfaces which are to be cured with a curing compound shall be covered during the application of the compound. All areas to be patched shall be cleaned thoroughly. Minor honeycomb or otherwise defective areas shall be cut out to solid concrete but to a depth of not less than 25 mm.

#### **9.2**

**RUBBED-FINISH.** Rubbed-finish shall be provided for all exposed concrete beams and ceiling. The surface of the concrete shall not vary more than 16 mm when measured from a five-foot template. Exposed surfaces shall be rubbed with carborundum or other abrasives to a smooth even finish or uniform appearance. Upon completion of the rubbing, the surface shall be washed thoroughly with clean water.

#### **9.3**

**BROOM-FINISH.** Broom-finish shall be given to exterior parking area or as approved. The concrete shall be screeded and floated to the required finish level with no coarse aggregate visible. After the surface moisture has disappeared and laitance has been removed, surface shall be steel-trowelled to an even, smooth finish. The trowelled surfaces shall be broomed with a fiber-bristle brush in a direction traversing to that of the main traffic.

## **PART 10**

### **CURING**

#### **10.1**

**GENERAL REQUIREMENTS.** Curing for all concrete shall be accomplished by preventing loss of moisture, rapid temperature change, mechanical injury, or injury from rain or flowing water for a period of 7 days when normal Portland cement has been used. Curing shall be started as soon after placing and finishing as free water has disappeared from the surface of the concrete. Curing may be accomplished by any of the following methods or combination thereof, as approved.

#### **10.2**

**MOIST CURING.** Unformed surfaces shall be covered with burlap or other approved fabric-type mats and shall be kept continually wet. Forms shall be kept continually wet. If forms are removed before the end of the curing period, curing shall be continued on unformed surfaces that will be unexposed in the finished work.

#### **10.3**

**IMPERVIOUS SHEET CURING.** Surfaces shall be covered with waterproof paper, polyethylene coated waterproof paper or burlap, or

polyethylene sheets, lapped 100 mm at edges and ends, and sealed with an adhesive tape suitable for the type of covering used. The covering shall be weighed to prevent displacement, and kept in place and in repair during the curing period.

- 10.4 CURING PERIODS. When 7-day compression test cylinders, representative of parts of a structure already placed, indicate that the 28-day strengths may be less than 90% of the design strengths, those parts of the structure shall be given additional curing, as directed by the Construction Architect/Engineer. Curing shall be as follows:

TIME (Minimum)	CONCRETE ELEMENT
7 Days	All concrete not specified otherwise
10 Days	Pavement not undercover

- 10.5 REMOVAL OF FORMS AND PROTECTION. Forms shall be removed in a manner, which will prevent damage to the concrete. Forms shall not be removed without approval of the Construction Architect/Engineer.

## **PART 11 SAMPLING**

- 11.1 CONCRETE. The strengths specified and the design mix shall be verified during the progress of the work at intervals by testing standard cylinders of samples taken at the job site.

Three test cylinders shall be taken for each 60 cubic meter or fraction thereof of each class of concrete placed, but at least test cylinders shall be taken each day for each class of concrete placed that day, or as directed by the Construction Architect/Engineer. No more than 3 cylinders shall be taken from any one batch. The contractor shall furnish the necessary labor, materials, and facilities for taking the samples, handling, storing the cylinders at the site of the work, and shipping the cylinders for testing to the authorized and designated testing laboratory at his expense.

- 11.2 SAMPLE IDENTIFICATION. Each sample shall be contained in a clean container, which shall be securely fastened to prevent loss of material. It shall be tagged for identification. The tag shall contain the following information: (1) Contract No., (2) Sample No., (3) Quantity, (4) Date Sample was taken, (5) Sampler, and (6) Intended Use.

- 11.3 CONCRETE TESTING.
- Testing consistency of concrete slump shall be determined in accordance with ASTM C143. Samples for a slump determination will be taken from the concrete during placing in the forms. Tests shall be made.
  - Tests shall likewise be made at the beginning of a concrete placement operation and at subsequent intervals to insure that the specification requirements are met.

- c. Concrete testing shall also be done whenever test cylinders are made.
- d. Testing of specimens for compressive strength shall be in accordance with ASTM C39. Test will be made at 7 and 28 days from time of molding. When a satisfactory relationship between 7- and 28-day strengths has been established, the 7-day tests' results may be used as an indicator of the 28-day strength. Each test shall be the average of the strengths of the three test specimens of a set except that if one specimen in a set of three shows evidence, other than low strength, or improper sampling, molding, handling, or curing, the remaining two specimens shall be considered the test result. No more than 10 percent of the cylinders tested shall have compressive strengths less than that specified.

## **DIVISION 4.0 MASONRY**

### **SECTION 4.01 CONCRETE MASONRY UNIT WORK**

#### **PART 1 GENERAL**

1.1 SCOPE. This section includes concrete masonry unit work, complete.

1.2 DELIVERY, HANDLING, AND STORAGE OF MATERIALS.\_ Cement and other cementitious materials shall be delivered to the site and stored in unbroken bags, barrels, or other approved containers, plainly marked and labeled with the manufacturer's names and brands. Mortar materials shall be stored in dry, weather tight sheds or enclosures, and shall be stored and handled in a manner which will prevent the inclusion of foreign material and damage by water or dampness. Concrete masonry units shall be handled with care to avoid chipping and breakage, and shall be stored as directed. Concrete masonry materials shall be protected from contact with the earth and exposure to the weather, and shall be kept dry until used.

#### **PART 2 MATERIALS**

CONCRETE MASONRY UNITS shall be 2 or 3-core steam-cured modular blocks. CHB shall have a minimum face thickness of 1" (0.25) nominal size shall be 6"x8"x16" and 4"x8"x16" with minimum compressive strength as follows:

Class A – 900 psi

Class B – 750 psi

All units shall be store for a period of not less than 28 days (including curing period) and shall not be delivered to the job site prior to that time unless the strengths equal or exceed those mentioned in the specifications.

2.1 PORTLAND CEMENT shall Portland ASTM C150-68 Type I

2.2 SAND shall conform to PNS 18 type 1.

2.3 WATER for mixing shall be potable.

- 2.4 REINFORCING STEEL BARS – lintel and vertical reinforcing bars, which conforms strictly to ASTM specifications. Rebars for CHB shall be with 10mm Ø deformed steel bars spacing as indicated on the detailed drawings. corrugated structural grade.

**PART 3 PROPORTIONS, MEASUREMENT AND MIXING**

- 3.1 MORTAR MIXING. Mortar materials shall be measured by volumetric proportioning in approved containers that will insure that the specified proportions of materials will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels will not be permitted. Unless specified otherwise, mortar shall be mixed in such a manner that the materials will be distributed uni-formly throughout the mass. Mortar shall be mixed in the proportions of one part Portland cement and 3 parts sand.

- 3.2 GROUT shall consist of a mixture of cementitious materials aggregate as specified hereinafter; water shall be added in sufficient quantity to produce a fluid mixture. Fine grout shall be provided in grout spaces less than 50 mm in any horizontal dimension or in which clearance between reinforcing and masonry is less than 20 mm.

- 3.3 FINE GROUT shall be mixed in proportions of one part Portland cement and 3 parts sand.

- 3.4 COARSE GROUT shall be mixed in proportions of one part Portland cement, 3 parts sand and 3 parts pea gravel passing a 10-mm sieve.

**PART 4 ERECTION**

- 4.1 WORKMANSHIP. Concrete masonry walls shall be carried up level and plumb all around. One section of the walls shall not be carried up in advance of the others unless specifically approved. Unfinished work shall be stepped back for joining with new work. Heights of masonry at each floor, and at sills and heads of opening shall be checked with an instrument to maintain the level of the walls. Door and window frames, louvered openings, anchors, pipes, ducts and conduits shall be built-in carefully and in a neat manner as the masonry work progresses. Spaces around metal doorframes shall be filled solidly with mortar. Concrete masonry units shall be handled with care to avoid chipping, backing, and spilling of faces and edges. Structural steel work, bolts, anchors, inserts, plugs, ties, lintels, and miscellaneous metal work specified elsewhere shall be placed in position as the work progresses. Unless directed otherwise, partitions shall extend from the floor to the bottom of the floor or roof construction above. Non-load-bearing partitions and interior walls shall be securely anchored to the construction above in a manner that provides lateral stability while permitting unrestricted deflection of construction above, scaffolding well-braced and securely tied in position. Overloading of scaffolding will not be permitted.

- 4.2 MORTAR JOINTS shall be uniform in thickness, and the average thickness of any three consecutive joints shall be 10 mm to 12 mm. Changes in coursing or bonding after the work is started will not be permitted. Exposed joints shall be rolled slightly concave with a round or other approved jointer when the mortar is thumbprint hard. The jointer shall be slightly larger than the width of the joint so that complete contact is made along the edges of the units, compressing and sealing the surface of the joint. Joints in masonry that will not be exposed shall be struck-flush. Horizontal joints shall be struck-flush. Horizontal joints shall be rolled first. Joints shall be brushed to remove all loose and excess mortar. All horizontal joints shall be level; vertical joints shall be plumb and in alignment from top to bottom of wall, within a tolerance of plus or minus 12 mm.
- 4.3 CONCRETE MASONRY UNIT WORK. The first course of concrete masonry units shall be laid in a full bed of mortar for the full width of the unit; the succeeding courses shall be laid with broken joints. The bed-joints of concrete masonry unit shall be formed by applying the mortar to the entire top surfaces of the inner and outer face shell. The head joints shall be formed by applying the mortar for a width of about 25-mm to the ends of the adjoining units laid previously. The mortar for joints shall be smooth, not furrowed, and shall be of such thickness that it will be forced out of the joints as the units are being placed in positions. Where anchors, bolts, and ties occur within the cells of the units, such cells shall be filled with mortar or grout as the work progresses. Concrete masonry units shall not be damped before or during laying.
- 4.4 REINFORCING shall be positioned accurately as indicated. As masonry work progresses, vertical reinforcing shall be rigidly secured in place at vertical intervals as indicated. Reinforcing shall be embedded in grout as grouting proceeds. The minimum clear distance between masonry and vertical reinforcement shall be not less than 12 mm. Unless indicated or specified otherwise, splices shall be formed by lapping bars not less than 20 bar diameters and wire tying them together.
- 4.5 BONDING AND ANCHORING. Masonry walls and partitions shall be accurately anchored or bonded at points where they intersect, and where they abut or adjoin the concrete frame of a building. All anchors shall be completely embedded in mortar.
- 4.6 GROUT PLACEMENT. Grouting shall be performed from interior side of walls, except as approved otherwise. Sills, ledges, offsets and other surfaces to be left exposed shall be protected from grout droppings; grout falling on such surfaces shall be removed immediately. .

## **DIVISION 5.0 METAL**

### **SECTION 5.01 REINFORCING STEEL BARS**



**PART 1.0 GENERAL**

- 1.1 All steel reinforcing bars to be used in this project shall consist of round deformed bars with lugs or projection on their sides to provide a greater bond between the concrete and the steel. Steel reinforcement shall be provided as indicated, together with all necessary wire ties, chairs, spacers, supports and other devices necessary to install and secure the reinforcement properly.
- 1.2 The steel reinforcing bars for footings, columns, beams, girders, CHB walls, slabs, and other concrete members shall all conform to the number, size and spacing as indicated in the drawings or schedule of steel reinforcement.
- 1.3 All steel reinforcement to be installed in place shall be free from rust, scale or other coatings and foreign substances to prevent the destruction or reduction of the bond with concrete and shall be accurately placed and secured against displacement by tying them together at each bar intersection with gauge no. 16 G.I. wire.
- 1.4 The following concrete protection for reinforcement shall be used for the various parts/members of the buildings:
- Columns footings, and wall footings..... 70 mm
  - Columns, beams/girders, slabs..... 40 mm
- 1.5 Structural Steel shall be ASTM A36 with minimum yield strength, fy, 248 MPa (36,000 psi). All structural steel works shall be painted with red oxide primer and shall be final coated with aluminum silver paint.
- 1.6 **SOURCE QUALITY CONTROL**  
The Contractor shall be responsible for the fabrication, correct fitting and alignment of the various metal items or component members. However, the Fabricator shall permit the Architect or an independent inspection agency, if engaged by the Owner, to inspect work In progress in his shop. Such Inspection shall not relieve the Contractor of his responsibility to furnish materials and workmanship in accordance with the Contract Documents.
- 1.7 **PRODUCT DELIVERY, HANDLING AND STORAGE**  
All materials shall be handled and stored in such manner as to prevent damage or disfigurement. Finished items or components shall be stored above ground on platforms, pallets, or other supports and protected from harmful elements.
- 1.8 **PROTECTION**  
The installer shall protect any existing work subject to damage during the installation of specified work and shall adequately protect specified work during installation. The installer shall protect finished work that is readily subject to damage by subsequent work or environmental conditions immediately following the installation thereof.
- 1.9 **FIELD MEASUREMENTS:** Fabricator shall take actual measurements in field to verify or supplement dimensions indicated. He shall be responsible for accurate fit of specified work.
- 1.10 **FIELD QUALITY CONTROL:** Facilities shall be provided by the Contractor, as

needed, for the proper inspection of the specified work, including temporary platforms, hoists, protective devices, electric current, etc. Improper workmanship, as determined by the Architect, shall be corrected and replaced, at no additional cost to the Owner.

- 1.11                    **CONDITIONS OF WORK-IN-PLACE:**  
Work-in-place, on which specified work is in any way dependent, must be examined. Any defect that may influence satisfactory completion and performance of specified work must be reported, in writing, to the Contractor and the Architect. The absence of such notification shall be construed as acceptance of work-in-place.
- 1.12                    **CORROSION PROTECTION**  
Separate dissimilar metals, and metals from soil and other corrosive surfaces, with a 30-mil coating of Bituminous compound, SSPC Paint 12, unless permanent separation is provided.

## **SECTION 5.02                    STRUCTURAL STEEL**

### **PART 1.0 SCOPE**

- 1.) **THE SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS**  
Advance Stress Design and Plastic design is intended as alternate to the currently approved Load and Resistance for the Design Specifications for Structural Steel Buildings the American Institute of Steel Construction, Inc.
- 1.1 **Alternative Design Specifications.**  
As an alternative, the design of structural steel buildings using the Load and Resistance Factor Design Specification for Structural Steel Buildings, December 1, 1993, published by the American Institute of Steel Construction, Inc. shall be permitted.
- 1.2 **Cold and Formed Steel Members.**  
The design of cold-formed carbon on low-alloy steel structural members shall be in accordance with the requirements of Load and Resistance Factor Design Specifications for Cold Formed Steel Structural Members, March 16, 1991; or the specifications for Design of Cold-Formed Steel structural members, 1986 (with December 1989 addendum), published by the American Iron and Steel Institute (AISI).
- 1.3 **Special provisions for earthquake resistance.**  
1.3.1 In regions of high seismic risk (Seismic zone 4) or moderate (seismic zone 2) provisions of Section 515 shall be satisfied.
- 2.) This section provides minimum requirements for the design and construction of structural steel building elements of any structure erected under requirements of the National Building Code of the Philippines (NBCP) to which this section forms a part of by reference.
- 3.) This section shall govern in all matters pertaining to design, construction and material properties of structural design elements wherever this Section is in conflict with the requirements contained in other standards referenced in this section.

### **PART 2.0 LIMITS OF APPLICABILITY**

- 2.1 **Structural Steel Defined.**

2.1.1 As used in this specification, the term structural steel refers to the steel elements of the structural steel frame essential to the support of the design loads.

#### 2.1.2 Types of Construction

2.1.2.1 Three basic types and associated design assumptions are permissible under the respective conditions stated herein, and each will govern in a specific manner the size of members and the types and strength of their connections.

TYPE 1. Commonly designated as “rigid-frame” (continuous frame), assumes that beam-column connections have sufficient rigidity to hold virtually unchanged the original angles between intersecting members.

TYPE 2. Commonly designated as “simple framing” (unrestrained, free-ended), assumes, that in so far as gravity loading is concerned, end of beams and girders are connected for shear only and are free to rotate under gravity load.

TYPE 3. Commonly designated as “semi-rigid framing” (partially retained), assumes that the connections of beams and girders possess a dependable and known moment capacity intermediate in degree between the rigidity of Type 1 and the flexibility of Type 2.

2.1.2.2 The design of all connections shall be consistent with the assumptions as to type of construction called for on the design drawings.

2.1.2.3 Type 2 construction is permitted under this Specification, subject to the stipulations of the following paragraph, wherever applicable.

2.1.2.4 In buildings designated as Type 2 construction (i.e., with beam-to-column connections under than wind connections assumed flexible under gravity loading) the wind moments may be distributed among selected joints of the frame, provided:

1. connections and connected members have adequate capacity to resist wind moment.
2. girders are adequate to carry full gravity loads as “simple beams”.
3. connections have adequate inelastic rotation capacity to avoid overstress of the fasteners or welds under combined gravity and wind loading.

2.1.2.5 Type 3 (semi-rigid) construction is permitted upon evidence; the connections to be used are capable of furnishing, as a minimum, a predictable proportion of full end restraint. The proportioning of main members joined by such connections shall be predicted upon no greater degree of end restraint than this minimum.

2.1.2.6 Type 2 and 3 construction may necessitate some non-elastic, but self-limiting, deformation of a structural steel part.

## PART 3.0 MATERIAL

### 3.1 Structural Steel

#### 3.1.1 ASTM Designations

1. Material conforming to one of the following standard specifications is approved for use under this Specification:

- Structural Steel, ASTM A36
- High-yield strength, quenched and tempered
- Alloy-Steel Plate, suitable for welding, ASTM A514
- Structural steel with 290 MPa minimum yield point, ASTM A529
- Steel, sheet and strip, carbon, hot-rolled, structural quality, ASTM A570 Grade 275, 310 and 345
- High-strength, low-alloy columbium-vanadium
- Steels of structural quality, ASTM A572
- High-strength Low-alloy structural steel with 345 MPa minimum yield point to 100mm thick, ASTM A588.

2. Certified mill test reports or certified reports of tests made by the fabricator or a testing laboratory in accordance with ASTM A6 or A568, as applicable, and the governing specification shall constitute sufficient evidence of conformity with one of the above ASTM standards. Additionally, the fabricator shall, if requested, provide an affidavit stating the structural steel furnished meets the requirements of the grade specified.

3.1.1 Unidentified Steel. Unidentified steel, if free from surface imperfections is permitted for parts or minor importance, or for unimportant details, where the precise physical properties of the steel and its weldability would not affect the strength would not affect the strength of the structure.

#### 3.1.2 Heavy Shapes

For ASTM A6 Groups 4 and 5 rolled shapes to be used as members subject to primary tensile stresses due to tension of flexure, toughness need not be specified if splices are made by bolting. If such members are spliced using full penetration welds, the steel shall be specified in the contract documents to be supplied with Charpy V-notch testing in accordance with ASTM A6, Supplementary Requirements S5. The impact test shall meet a minimum average value of 27 N-M, absorbed energy at +21.1°C and shall be conducted in accordance with ASTM A 673 with the following exceptions:

The center longitudinal axis of the specimens shall be located as near as practical midway between the inner flange surface and the center of the flange thickness at the intersection with the web mid thickness.

Tests shall be conducted by the producer on material selected from a location representing the top of each ingot or part of an ingot used to produce the product represented by these tests.

For plates exceeding 50mm thick used for built-up members with bolted splices and subject to primary tensile stresses due to tension of flexure, material toughness need not be specified. If such members are spliced using full penetration welds, the steel shall be specified in the contract documents to be supplied with Charpy V-Notch testing in accordance with ASTM A6, Supplementary Requirements S5. The impact test shall be conducted by the producer in accordance with ASTM A673, frequency P, and shall meet a minimum average value of 27 N-M absorbed energy at +21.1°C.

The above supplementary toughness requirements shall also be considered for full welded-penetration joints other than splices in heavy rolled and built-up members subject to primary tensile stresses.

#### 3.1.3 Steel castings and Forgings.

3.1.3.1 Cast steel shall conform to one of the following standard specifications:

Mild-to-medium-strength carbon-steel castings to general applications, ASTM A27, Grade 448-241 High strength steel castings for structural purposes, ASTM A148, Grade 551-345.

3.1.3.2 Steel forgings shall conform to the following standard specifications:

Steel forgings carbon and alloy for General industrial use, ASTM A668.

3.1.3.3 Certified test reports shall constitute sufficient evidence of conformity with the standards.

3.1.3.4 Allowable stresses shall be the same as those provided for other steels, where applicable.

#### 3.1.4 RIVETS

3.1.4.1 Steel rivets shall conform to the following standard specifications: Steel Structural Rivets, ASTM A502

3.1.4.2 Manufacturers certification shall constitute sufficient evidence of conformity with the standard.

#### 3.1.5 BOLTS, WASHERS AND NUTS

3.1.5.1 Steel bolts shall conform to one of the following standard specifications:

- Carbon steel bolts and studs, 414 MPa of tensile strength, ASTM A407
- High-strength bolts for structural steel joints, ASTM A325 quenched and tempered steel bolts and studs, ASTM A449
- Heat-treated steel structural bolts, 1043 MPa minimum tensile strength, ASTM A490
- Carbon and alloy steel nuts, ASTM A490
- Hardened steel, ASTM F436

3.1.6.1 A449 bolts are permitted only in connections requiring bolt diameter greater than 38mm and shall not be used in slip-critical connections.

3.1.6.2 Manufacturers certification shall constitute sufficient evidence of conformity with standards.

#### 3.1.7. FILLER METAL AND FLOX FOR WELDING

3.1.7.1 Welding electrodes and fluxes shall conform to the one of the following specifications of the American welding Society:

- Specifications for covered carbon steel arc welding electrodes, AWS A5.1
- Specifications for low-alloy steel covered arc welding electrodes, AWS 5.5
- Specifications for carbon steel filler metals for gas shielded arc welding, AWS A5.18
- Specifications for carbon steel electrodes for flux-cored arc welding, AWS A5.20

3.1.7.2 Manufacturers certification shall constitute sufficient evidence of conformity with the standards.

#### 3.1.8. Stud Shear Connectors

3.1.8.1 Steel stud shear connectors shall conform to the requirements of structural welding code Steel AWS 01.1

3.1.8.2 Manufacturers certification shall constitute sufficient evidence of conformity with the code.

### PART 4.0 LOADS AND FORCES

4.1.1 The minimal loads shall be minimum design loads stipulated by the applicable code under which the structure is designed or dictated by the conditions involved. In the absence of a code, the loads and load combinations shall be those stipulated in Chapter II.

#### 4.1.2 Dead load and Live load

The dead load to be assumed in design shall consist of the weight of steel work and material permanently fastened thereto or supported thereby. The live load shall be that stipulated by the applicable code under which the structure is being designed or that dictated by the conditions involved.

#### 4.1.3. Impact

For structures carrying live load which induce impact, the assumed live load shall be increased sufficiently to provide for same.

If otherwise specified, the increase shall not be less than:

- For supports of elevators – 100%
- For cab-operated traveling crane supports girders and their connections – 25%
- For pendant operated traveling crane support girders and their connections – 10%
- For supports of light machinery shaft or motor driven – 20%
- For supports of reciprocating machinery or power driven units – 50%
- For hangers supporting floors and balconies – 33%

#### 4.1.3.1 Crane Runaway Horizontal Forces

The lateral force on crane runways to provide for the effect of moving crane trolleys shall be not less than 20% of the sum of weights of the lifted load and of the crane trolley, but exclusive of other parts of crane. The force shall be assumed to be applied at the top of the rails, acting in either direction normal to the runway rails, and shall be distributed with due regard for lateral stiffness of the structure supporting the rails.

The longitudinal attractive force shall not be less than 10% of the maximum wheel loads of the crane applied at the top of the rail, unless otherwise specified.

The crane runway shall also be designed for crane stop forces.

#### 4.1.3.2 Wind

Proper provision shall be made for stresses caused by wind, both during erection and after completion of the building.

#### 4.1.3.3 Other Forces

Structure in localities subject to earthquakes, typhoons and other extra-ordinary conditions shall be designed with due regard for such conditions.

## **PART 5.0 DESIGN BASIS**

### 5.1 Allowable stresses

5.1.1 Except as provided in Section 514, all structural members, connections and connectors shall be proportioned the stresses due to the working loads do not exceed the allowable stresses specified in sections 504 through 511. The allowance stresses specified in these sections do not apply to peak stresses in regions of connections, provided requirements of section are satisfied.

5.1.2 For provisions pertaining to plastic design, refer to section 514.

#### 5.1.3 Wind and seismic stresses.

5.1.3.1 Allowable stresses maybe increased 1/3 above the values otherwise provided when produced by wind or seismic loading, acting alone or in combination with the design dead and live loads, provided required section computed on this basis is not less than that required for the design of dead and live load impact (if any) computed without the 1/3 stress increase, and further provided that stresses are not otherwise required to be calculated on the basis of reduction factors applied to design loads in combinations. The above stress increase does not apply to allowable stress ranges provided in section 511.5.

#### 5.1.3.2 Structural Analysis

5.1.3.2.1 The stress in members, connections and connectors shall be determined by structural analysis for the loads defined in section 501.4. Selection of the method of analysis is the prerogative of the responsible engineer.

#### 5.1.4. Design for Serviceability and other considerations

5.1.4.1 The overall structure and the individual members, connections and connectors shall be checked for serviceability in accordance with section 512.

#### 5.1.5 Reference Codes and Standards

5.1.5.1 Where codes and standards are referenced in this specification, the following standards with to be used as referenced are listed;

- American National Standards Institute ANSI B18.1 -72 ANSI A58.1 – 82
- American Society of Testing and Materials
- Specifications for General Requirements for Rolled Steel, Plates, Shapes, Sheet Piling and bars for Structural Use, ASTM A6-87d.
- Specifications for Steel Castings, carbon for General Application, ASTM A27-87
- Specifications for structural steel, ASTM A36-87.

## **DIVISION 7.0**

## **THERMAL AND MOISTURE PROTECTION**

## **PART 1.0      GENERAL**

- 1.1            DESCRIPTION: The metal roofing required for this work is indicated on the drawings.
- 1.2            QUALITY ASSURANCE: Work shall be done by thoroughly trained and experienced workmen, who are completely familiar with the materials involved and the recommended methods of installation.
- 1.3            PRODUCT HANDLING
- A. PROTECTION: The Roofing Contractor shall use all means necessary to protect the materials before, during and after installation. All roofing materials shall be stored in a covered shelter or covered completely with loose tarpaulin or similar materials and stock with one end slightly elevated.
- B. REPLACEMENTS: In the event of damage, all necessary repairs and replacements must be immediately made, subject to the approval of the Architect and at no additional cost to the Owner.
- 1.4            SUBMITTALS: Samples of finishes and accessories, shop drawings showing materials, layouts, details of construction, installation and all necessary dimensions shall be submitted.

## **PART 2.0      PRODUCTS**

- 2.1            MATERIALS: All metal roofing shall be horizontal Rib Design Pre-painted metal roofing.
- 2.2            THICKNESS: 0.4mm to 0.6mm thick, (Ga. 24) Color of sheets for roofing and 0.4mm thick. (GA. 24) for flashing. *Use Ga. 24 stainless steel gutters.*
- 2.3            COLOR: For Architects approval.
- 2.4            FASTENING: Fastened by metal cleats, which are mounted on the roof structure by means of self-drilling screws, wood screws or stove bolts. Location of fasteners are along trusses and rafters.
- 2.5            ACCESSORIES: Provide all accessories indicated In the drawings or necessary for the completion of work. *Use Individual hip and ridge caps.*
- 2.6            INSULATION: Use Polyethelene (PE) Foam with foil on two sides under metal roofing.

## **PART 3.0      EXECUTION**

### **3.1            ROOF INSTALLATION**

- A. Roof framing should be well anchored, straight, level and parallel to each other.

B. Check that all gutter and eave lines are perpendicular by using the 345 triangle method or by Intersecting method.

C. Install the main gutter before the hip and valley gutters.

3.2. ROOF CARE DURING INSTALLATION

A. Cement from concreting works, waterproofing compounds, chemical solutions, joint welding sparks, nails and iron tools should not be allowed to drop on, extend to or rust away at the roof, since removal or scraping of such materials later could damage the roof's coating.

B. Scaffoldings should have protective caps on the points of contact with the roof and should be rested gently on the roof edges, gutters and end-flashings to prevent dents and scratches.

C. Roof traffic should be minimized. When crossing the roof area, walking should be conducted along roof frame locations, along overlaps or on wooden planks laid over the roof panels.

3.3 CLEANING UP

A. Pick up all discarded scrap materials, especially ferrous metals such as nails and wires.

B. Immediately wash all plastering sites with water.

C. Clean all gutters of leaves and other waste refuse to prevent clogging at downspout areas and to allow the continuous flow of water.

**A. DIVISION 8.0 DOORS AND WINDOWS**

**B. SECTION 8.03 WOOD DOORS**

**PART 1.0 GENERAL**

1.1 SUBMITTALS

A. SHOP DRAWINGS: Indicate dimensions and elevation of each door type, location in building of each door, and pertinent erection instructions.

B. SAMPLES: Submit samples of corner section of each type of door cut diagonally with twelve-inch sides, showing construction and finish.

1.2 PRODUCT HANDLING

Specified work shall be protected against damage and dampness during transportation to project site. Damaged items shall be replaced without additional cost to the Owner. Specified work shall be delivered to the building, in which it is to be installed and at such time when the normal temperature and humidity conditions approximate the interior conditions that will exist when the building is occupied.



1.3            **WARRANTY**

Specified work shall be guaranteed for two (2) years starting from date of Owners acceptance against warping, twisting or manufacturing defects. During the "Warranty Period", the contractor, shall ascertain that each wood door shall be equal in quality to the original specifications; the contractor shall make the necessary adjustments without additional cost to the Owner, including all labor costs of handling and refinishing. The Contractor further agrees to make the replacement within ten (10) days after the receipt of notice from the Owner.

**PART 2.0        PRODUCTS**

2.1            **FLUSH HOLLOW CORE DOOR**

- A. TANGUILE DOOR: 45 mm thick door using 6 mm thick Tanguile plywood veneer applied on horizontal cross-banding. For flush doors of Comfort Rooms and other moisture exposed doors, use 6mm thick fiber cement board facing.
- B. FACE: 3 plywood veneer, verify type from plans
- C. STILE EDGES: Provide stile edges to doors as shown on the drawings.
- D. TOP AND BOTTOM EDGES: Hardwood or soft wood in accordance with the MANUFACTURER'S latest printed standards. Top and bottom edges of doors shall be sealed with spar varnish or other approved sealer prior to shipment
- E. FRAME: Provide wood frames trimmed from 50 x 50 mm wood strips. Use thoroughly seasoned, kiln dried soft wood cores for frames and trim, milled true to form from solid stock and free from defects that would impair its strength or durability. Provide applied members at jambs and heads where indicated.  
Provide applied members at jambs and heads where indicated.

2.2            **PANEL DOORS**

TANGUILE OR NARRA : Panel doors shall be decorative or carving-type, from Tanguile or Narra, as indicated.

**PART 3.0        EXECUTION**

- A. WOOD DOORS: Wood doors shall be conditioned to the average prevailing temperature and humidity at building before hanging. Doors should fit accurately In their respective frames, with proper door clearances.
- B. CLEARANCES: Door clearances shall be 1/8-Inch at head and lock stile, 1/6-inch at hinge stile, and 1/2-inch at bottom including thickness of resilient floor covering, unless otherwise indicated.
- C. CONSTRUCTION: Stiles and rails shall be mortised and provided with the necessary rabbets to receive the specified type of panel. All joints shall be made with water resistant glue. The assembled door frames shall be held in retainers until the glue has dried and attained its strength.  
Panels shall be true to shape and profiles and shall be uniform throughout for doors of the same type. Mouldings shall be solid with sharp and clean cut profiles. All joints at corners shall be mitered.

- D. **FINISH:** Upon completion of each door unit, the door shall be sanded free of machine marks, which will show through the finish. Verify from Plans for the finish of all doors.

## **C. DIVISION 9.0 FINISHES**

### **Section 9.1 GLAZING**

#### **PART I – GENERAL**

##### **1.1 SCOPE**

This section includes all labor, materials, equipment and the performance of all operations necessary to furnish and install all glass and glazing work in accordance with the drawings and this specification. The works included are:

- a) Glass and glazing for hollow, and wood doors (where specified).
- b) Glass and glazing for aluminum doors, windows and frames (where specified).
- c) Mirror for all toilets.

##### **1.2 SUBMITTALS**

1.2.1 **SAMPLES:** Submit samples for Architect's approval of all glass types specified herein, not less than 5" x 8" (125 x 800mm). Match these samples with the delivered materials prior to installation.

1.2.2 **CERTIFICATES:** Submit manufacturer's specification and recommendations for glazing conditions specified herein. Submit certificates of compliances, certifying conformance with requirements of this specification.

##### **1.3 QUALIFICATIONS**

1.3.1 **MANUFACTURERS:** It is the intent of this specifications that the products of the specific manufacturer's listed herein, represent quality standard and performance standards desired. Other manufacturers offering products equivalent to those specified will be acceptable, subject to approval.

1.4 **DELIVERY, PROTECTION AND STORAGE.** All glass shall be carefully packed for transportation, exercising reasonable precaution to insure avoidance of damage during transit. Use care in unloading, unpacking and storage on arrival at job site to avoid damage. Deliver all glazing accessory materials in manufacturer's original unopened containers, clearly marked as to their contents.

Store all materials at the job site, in a manner assuring its safety from all forms of damage. Screen from paint, plaster, welding splatter, construction scum and the like. Protect glass from soiling, condensation, etching, etc. Follow manufacturer's instructions rigidly.

##### **1.5 SUBMITTALS**

##### **1.5.1 SHOP DRAWINGS**

a) Details for the exterior wall are shown schematically and together with the profiles to be developed are intended to establish performance and material quantities desired. The exterior wall as shown shall be a complete system including all stiffeners, fasteners, sealant, drainage systems, gasket, joining,

miscellaneous pieces, and material thicknesses as required to form a high quality waterproof enclosure in accordance with the profiles shown. The window wall Contractor shall be responsible for development of final design intent shown. All proposed details and finishes for each type of window must be reviewed and accepted by the Architect prior to fabrication.

b) Details not shown are similar in character to those detailed. Where specific dimensions, details or design intent cannot be determined, consult the Architect before proceeding with work.

c) All details are to be coordinated with the structural framing and other building components including exterior cladding, interior finishes, and other related building components in order to provide a complete enclosure of finish materials. Structural and fireproofing requirements shall comply with applicable codes and regulations.

d) The anchorage angles, shapes, locations, and details are suggestive and are to be engineered and detailed as required. The General Contractor is to coordinate all anchorage details with the appropriate trades.

e) Provide aluminum brake metal closure plates with Thermal Acrylic Enamel (TAE) finish between window wall sill members and slab edges. Design of sill and closure shall accommodate slab elevation tolerances. Closures shall be 3.2mm aluminum plate with thermal acrylic enamel finish and shall be anchored to slabs with flush anchors at not greater than 0.6m on centers.

f) Any electrical outlets required for window washing at roof terraces shall be flush electrical boxes with finished covers flush with adjacent cladding material.

g) All required lighting protection devices shall have concealed conductor cables. Only rod portion (no base plate) shall be visible.

h) All flashing to be stainless sheet steel metal. All vertical and horizontal joints in flashing to have flat locked soldered seams. Provide expansion joints not over 9.5mm on centers with loose lock filled with sealant. All penetration of flashing by panel attachment is to be seated.

i) Eight (8) copies of all shop drawings shall be submitted to the Architect for his approval. These drawings shall be at full scale as far as practical, and shall show in detail the construction of all parts of the work, including glass and metal thicknesses, methods of joining, details, and all field connections and anchorage, fastening and sealing methods, metal finishes and all other pertinent information.

No work shall be fabricated until the Architect has approved shop drawings for that work.

**1.6.1 SAMPLES:** Before any work is fabricated, this Contractor shall submit to the Architect for his approval the samples representing materials and finishes proposed for use in this work.

#### **1.6.2 MOCK-UPS**

##### **a. Mock-up for Color Selection:**

This contractor shall furnish all labor and materials to build (at jobsite) full size mock-up of the 'Punch' window expression (1.2 m wide x 2.2 m high or biggest panel size) for finalizing colors/textures prior to order. Aside from this, a window wall mock-up for testing will be prepared at the testing site, in accordance with the following:

b. Window Wall Mock-up and Testing:

1. Erect mock-up of full sized 2-storey high window wall as indicated on building exterior elevation and plan drawings.
2. Test mock-up for air infiltration, water penetration, and structural performance.
3. Built mock-up indicated but not less than requirements of ASTM E331 or E547 Section 8 to be used as test specimen and also for Architect's visual examination.
4. Use same materials, finishes, details, methods and anchoring system proposed for window wall. Test as follows:
  - a. Air infiltration - ASTM E283
  - b. Water Penetration (Uniform Static Pressure) - ASTM E331. Conduct with 15.15 liters per minute per 0.093 m<sup>2</sup>.
  - c. Water Penetration (Dynamic Pressure) - AAMA 501.1.
  - d. Structural Performance - ASTM E330. Conduct at 1.5 times maximum design wind pressure positive and negative.
  - e. Repeat Water Penetration (Uniform Static Pressure) test after structural test to design load.
  - f. Test to failure applying load in direction stipulated by the Architect.
  - g. Record pressures and deflections during test and describe failure.
  - c. Mock-up for Aluminum Panels: Prior to aluminum panel fabrication, provide panel mock-up 1 m in length for Architect's review.

#### 1.3.4 GUARANTEE

Before final payment is made, this contractor shall guarantee to the Owner in writing that all parts of the work will meet the specified Overall performance requirements (Part 3 of this Section). The work shall be free from defects in materials and workmanship for a period of two (2) years following its acceptance by the Architect. He shall certify in writing also that all work is in accordance with the Contract Documents and authorized alterations/ additions thereto. Should any defect develop during the guarantee period due to improper workmanship or materials under his jurisdiction, such defects will, upon written request, be repaired or replaced by this contractor at his own expense. If exploratory work is required to determine the cause of defects, the cost of such work shall be borne by this contractor only in case his work is found, in the judgment of the Architect, to be at fault.

#### 1.4 REFERENCES

Whenever published specifications, standards or methods are referred to, it shall be understood that reference is made to the latest edition of such publication.

#### 1.5 CONTRACTOR

- a. The contractor for the glazed aluminum curtain wall work is referred to throughout this section as 'this contractor', as opposed to the General Contractor, also referred to.
- b. The contractor shall have had sufficient track record in the execution of custom type monumental projects similar to the scope and nature to that specified.
- c. The contractor's proposal shall be accompanied by a written statement of any and all exceptions to, or variances from, the requirements of the drawings and specifications explaining such proposed variations/exceptions. Unless exceptions are so listed, the proposal shall be understood to represent full compliance with the requirements of the drawings and specifications.

#### 1.6 CONTRACTOR'S RESPONSIBILITY

- a. This contractor shall examine the contract drawings and these specifications to ensure that the work is complete. If errors, omissions, or inconsistencies are discovered he shall promptly notify the

Architect and the General Contractor in writing, and in submitting his bid shall state any qualifications affecting it.

b. This contractor shall coordinate his work with that of other trades and/or contractors involved, and shall promptly furnish deadlines for items to be supplied by others.

c. Dimensional tolerances and deviation from true plane permissible in the building frame to or over which the metal curtain walls is to be attached are defined in item 3.1 of these specifications.

## **Section 9.2 PAINTING**

This work includes painting and finishing interior and exterior surfaces. Unless otherwise specified, all materials before the application executes shall be approved by the Project Management Office in behalf of the Bulacan State University

## **DIVISION 15.0 MECHANICAL**

### **SECTION 15.01 PLUMBING SYSTEM**

#### **PART 1 GENERAL**

- 1.1 SCOPE/WORK INCLUDED. Work in this section includes furnishing all labor, materials, equipment, incidentals, procedures and supervision necessary for the installation of the plumbing system.
- 1.2 SUBMITTALS. The Contractor shall furnish, for approval, full Information and satisfactory evidence as to the kind and quality of materials or articles he will incorporate in the work.
- 1.3 QUALIFICATION OF WORKMEN. Only competent workmen, who have been thoroughly trained and experienced in the skills required and who are completely familiar with the materials involved and with the requirements of his work, shall be engaged.
- 1.4 GENERAL REQUIREMENTS. The project drawings shall show the general requirements as to sizes, arrangement, extent of piping, and location of equipment. Unless otherwise indicated or specified herein, all work shall be accomplished in accordance with the National Plumbing Code.

#### **PART 2 PRODUCTS AND MATERIALS**

- 2.1 PIPES AND FITTINGS
  - A. SOIL, WASTE, AND VENT PIPES shall be uPVC ULTIMA SUPRA SERIES manufactured by Emerald Vinyl Corporation.
    1. PVC cement shall be as recommended by the PVC pipe manufacturer, solvent type.
  - B. COLD AND HOT WATER LINE PIPES shall be REHAU distributed by Camp Marketing & Development, Inc.
    1. Couplings and pipe fittings shall be of the heavy duty type and as recommended by the pipe manufacturer.
  - C. VALVES
    1. Angle, check and glove valves shall be bronze, 125 pounds, and type as suitably for the application. Check valves shall be swing types.

2. Gate valves. All valves used for shut-off valves or gate valves shall be bronze, with screwed ends, and 125 pounds' pressure capacity.
  3. Clean-outs shall be provided in all soil, storm or waste lines at every change in direction greater than 45 degrees, size same as the pipe served. Clean-outs shall be extended to an easily accessible place or where indicated on the drawings.
  4. Pipe sleeves shall be installed and properly secured in place at all points where pipes pass through masonry or concrete, except unframed floors on earth with sufficient diameter to provide approximately 6 mm clearance around the pipe or insulation. Pipe sleeves in walls, partitions and through floors shall be of PVC pipe, schedule 40.
  5. Pipe hangers, inserts and supports shall be provided to all horizontal runs of pipes and shall be hanged with adjustable wrought iron or malleable iron pipe hangers spaced not over 1.5 meters apart for PVC pipes and 3.0 meters apart for steel pipes. Trapeze hangers may be used in place of separate hangers on pipes running parallel to and close to each other.
  6. Shock absorbers or air capped chambers shall be provided, where shown on the drawings, on all individual branch water lines to equipment or fixtures.
- D. HOSE BIBB shall be with metal handle, heavy duty type, chrome plated, compression type, with hose threads; size shall be as indicated.
- E. FAUCETS for water system shall be SANNIX Brass Fittings shown in Chrome, manufactured by American Standard or as specified herein or as indicated shall be heavy-duty type, chrome-plated and or as specified in Section 10.01 Miscellaneous Specialties.
- F. FLOOR DRAIN shall be stainless steel with strainer, size 100 mm x 100 mm with stainless fastening screw.
- G. TOILET AND BATH FIXTURES AND ACCESSORIES shall all be American Standard as specified in Section 10.01 Miscellaneous Specialties.

## **PART 3      INSTALLATION**

3.1      GENERAL. Piping shall be installed according to the shop drawings, as recommended by the manufacturer and as directed during installation, straight and as direct as possible, forming right angles or parallel lines with building walls and other pipes, and neatly spaced. Erect pipe risers plumb and true, parallel with walls and other pipes neatly spaced. Before being placed in position, pipe and fittings shall be cleaned carefully. All pipes shall be maintained in a clean condition.

3.2      ALL PIPING shall be properly supported or suspended on stands, clamps, hangers, or equivalent of approved design. Supports shall be installed in such a manner to permit pipe free expansion and contraction while minimizing

vibration. Do not install pipes in a manner that interferes with other pipes, ducts, conduits, equipment and adjacent structures of the building. The arrangement, positions and connection of pipes, fixtures, drains, valves, and the like indicated on the drawings shall be followed as closely as possible. All pipes shall be cut accurately to measurement and shall be worked into place without springing and forcing. Changes in pipes shall be made with reducing fittings. Pipes shall not pass through columns, footings, and beams, except where noted on the drawings.

- 3.3 ROUGH-IN FOR PIPES AND FITTINGS shall be carried along with the building construction. Correctly located openings of proper sizes shall be provided where required in the walls and floors for the passages of pipes. All items to be embedded in concrete shall be thoroughly cleaned and free from all rust and scale.
- 3.4 PIPES IN TRENCHES. Sewer and water piping shall be placed in separate trenches.
- 3.5 INSTALLATION OF SCREW-JOINTED PIPING. All pipes shall be cut accurately according to measurements established by the contractor and shall be worked into place without springing or forcing. Proper provision shall be made for the expansion and contraction of all pipelines. Pipe and fittings shall be free from fins and burrs. Screw joints shall be made with a lubricant applied on the male threads only; threads shall be full cut and not more than three threads on the pipe shall remain exposed. All exposed ferrous pipe threads after being installed and tested shall be given one coat of zinc chromate and enamel paint.
- 3.6 INSTALLATION OF FIXTURES. Connections between the earthenware of fixtures and the flanges on soil pipe shall be made gas and watertight. All bulk material including putty and plastics shall not be used for gaskets. Floor drains shall be secured in a water tight manner.
- 3.7 PROTECTIVE COATING FOR GALVANIZED STEEL PIPING BURIED IN THE GROUND. All galvanized steel piping buried in the ground shall be given a protective coating of zinc chromate primer and enamel paint.

#### **PART 4 QUALITY ASSURANCE**

- 4.1 TESTS. All defects disclosed by tests shall be rectified and the test repeated. All labor, materials and equipment used for tests shall be provided by the contractor.
  - A. WATER PIPING. Water piping shall be subjected to a hydrostatic pressure test of 100 pounds per sq. inch. All potable water piping shall be disinfected by a mixture containing not less than 0.6 pound of high test calcium hypochlorite, or an equivalent amount of chlorinated lime (about 2 pound), to each 1000-gallon of water, which provides not less than 50 PPM of available chlorine. The mixture shall be injected into the system shall then be drained, flushed with potable water, and placed in service.

- B. **SANITARY PIPING.** Before the installation of any fixture, the ends of the system shall be capped and all lines filled with water to the roof or 3 m above the highest fixture connections if test is done in sections or by floors and allowed to stand for at least 30 minutes without leakage. Test tees having cast iron screwed plugs shall be installed in the vertical stacks when tests are made in sections or by floors. Test within building shall be made with piping exposed. Underground piping shall be tested before backfilling.
- C. **PLUMBING SYSTEMS AND EQUIPMENT.** Plumbing system and equipment after complete installation shall be given an in service tests. All fixtures are installed the entire vent and sewer systems shall have a final test. Final test shall be either the smoke or peppermint test. Before proceeding with either test all traps shall be filled with water. Smoke test shall be accomplished by filling the entire sewer system with a pungent thick smoke produced by one or more smoke machines. When smoke appears at stack openings on the ceiling or roof, they shall be closed. A pressure equivalent to a 25 mm water column shall be exerted and maintained for 15 minutes before inspection starts. Peppermint tests shall be accomplished by introducing a minimum of 2 ounces of oil of peppermint into each stack. All stacks and line openings shall be closed during test, for a minimum period of 1/2 hour.

**PART 5 GUARANTEE**

The contractor shall furnish to the Owner a written guarantee covering the satisfactory operations of the plumbing installation. This shall be for a period of one year after the date of acceptance. During this period, the contractor shall repair or replace any defective work and pay for any repair or replacement cost. All damages due to improper use or caused by the Owner or his representatives/employees shall be at the Owner's expense.

**SECTION 15.02 EXTERIOR SANITARY SEWER SYSTEM**

**PART 1 GENERAL**

- 1.1 **SCOPE / WORK INCLUDED.** This section includes exterior sanitary sewer, complete. The construction required herein should include appurtenance structures to points of connection with the building sanitary sewer 1.5 m outside the buildings to which the sewer system is to be connected. Excavation and backfilling shall conform to Section: Earthwork.

**PART 2 MATERIALS**

2.1 **POLYVINYL CHLORIDE (PVC)**

- A. Sewer piping shall be uPVC ULTIMA Supra Series pipe, manufactured by Emerald Vinyl Corporation, size as indicated or 0.20 m in diameter or equivalent Philippine National Standard.
- B. Fittings and specials for use with PVC pipe shall have a strength not less than the pipe and shall be manufacturer's standard product, as approved.
- C. Jointing material. Coupling and sealing rings for pipe couplings and



fittings shall conform to manufacturer's recommendation, as approved.

- 2.2 CONCRETE PIPES. Pipes from septic tank to the storm drainage line shall be tongue and groove non-reinforced concrete pipes.
- 2.3 SEWER MANHOLE
- A. GENERAL. Sewer manhole shall be constructed of concrete with cast-iron frame and cover. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent storm sewer section. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the inlet and box will permit. The invert channels shall be formed directly on the concrete of the inlet base and shall be constructed by laying full section sewer pipe through the inlet and breaking out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than 25 mm per foot nor more than 50 mm per foot.
- B. MANHOLE COVER shall be pre-cast concrete. Cover shall be of type and size indicated. The word "SEWER", at least 50 mm high, shall be marked or cast into cover so as to be plainly visible.
- 2.4 SEPTIC TANK. Provide septic tank as indicated with complete piping and fittings. Cover shall be pre-cast concrete of type and size indicated. The word "SEPTIC" at least 50 mm high, shall be marked or cast into cover so as to be plainly visible. Septic tank cover shall be provided with steel lifting handle.
- 2.5 REINFORCED CONCRETE FOR SEWER MANHOLE AND SEPTIC TANK shall be as specified in Section: Cast-In-Place Concrete.

### **PART 3 INSTALLATION**

- 3.1 PIPE LAYING
- A. PIPE LAYING shall precede upgrade with the groove ends of tongue and groove pipe pointing in the direction of the flow. Each pipe shall be laid accurately to the line and grade shown on the drawings. Pipe shall be laid and centered so that the sewer has a uniform invert. As the work progresses, the interior of the sewer shall be cleaned of all superfluous materials.
- B. BEFORE MAKING A PIPE JOINT, all surfaces of the portions of the pipe to be joined shall be cleaned and dry. Lubricants, primers and adhesives shall be used as recommended by the pipe manufacturer. The joints shall then be placed, fitted, jointed, and adjusted to obtain the degree of water tightness required.
- C. TRENCHES shall be kept free of water and as dry as possible during bedding, lying, and jointing and for as long a period as required. When work is not in progress, open ends of pipe and fittings shall be satisfactorily closed with wood blocks or bulkheads so that no trench water or other material will enter the pipe or fittings.

- D. BACKFILL. As soon as possible after the joint is made, sufficient backfill material shall be placed along the pipe to prevent pipe movement off line or grade.
- E. SURFACE CLEAN-OUT. Cast-iron or PVC clean-out shall be provided, as indicated.
- F. JOINTS BETWEEN DIFFERENT PIPE MATERIALS shall be made as specified, using approved jointing materials.

**PART 4 QUALITY ASSURANCE**

All work shall be in first class condition and constructed properly in accordance with the drawings. No piping shall be buried, covered, or concealed until it has been inspected, tested, and approved. Water for testing will be furnished by the contractor.

**PART 5 CLEAN-UP**

Upon completion of the construction of the sanitary sewers, the contractor shall remove all surplus construction materials and debris resulting from the work.

**DIVISION 16.0**

**ELECTRICAL**

**SECTION 16.1 ELECTRICAL SYSTEM**

**PART 1 – GENERAL**

**1.01 Explanation**

**OWNER – GENERAL CONTRACTOR – ELECTRICAL CONTRACTOR RELATIONSHIP**

- a. The Electrical Work is a Specialty Trade, which shall be performed by a Contractor hereinafter referred to as the CONTRACTOR.
- b. The scope of work and responsibility of the CONTRACTOR is stipulated in these specifications and is treated separately from the function of the General Contractor and other Specialty Trade Contractors for the sole purpose of delineating the electrical work.
- c. Should the General Contractor subcontract the Electrical Work to a Specialty Trade CONTRACTOR all responsibilities and function of the CONTRACTOR stipulated in the Specification shall be assumed by the General Contractor.
- d. There shall be no contractual relation between the Owner and the specialty Trade Contractor subcontracted by the General Contractor.

**1.02 GENERAL REQUIREMENTS**

- a. The general Conditions and Provision of the Civil Works Contract not in conflict with these specifications and the drawings form part of and are included in these specifications.
- b. Examine the Specification and Drawings of the Civil Works, the Air-conditioning Works and Sanitary Works, for requirements which affect work under this Division whether or not such work is specifically mentioned in this Division.
- c. Visit the site and ascertain local conditions and facilities, the nature of the soil, and other conditions as may affect the work. The CONTRACTOR will be deemed to have

done this before preparing his proposal and no subsequent claim on the ground of inadequate or inaccurate information will be entertained.

- d. The CONTRACTOR shall strictly implement and observe safety from time to time, provide all necessary pre-caution, signage's and barrier's to protect general public from any harm caused by the work from the building site.

#### **1.03 WORK INCLUDED**

The work of the CONTRACTOR consist of furnishing all labor and supervision ,equipment and materials, and performing all operation in connection with the electrical system shown on the Drawings, their test and inspection, complete and in accordance with this specification and the drawing and subject to the terms and conditions of the contract and all other labor and materials not specifically mentioned as furnished and/or installed by others, to bring the electrical system to operating condition and ready for use by the Owner. The specific scope of work of the CONTRACTOR (by area and/or by work items) shall be as outlined in other contract documents.

#### **1.04 WORK BY OTHERS**

The following will be by other unless otherwise shown in the Drawing.

- a. Service connection to the Power utility company's facilities.
- b. Others as may be specified in the Drawing, elsewhere in the specification, the addenda, or in the contract documents.

#### **1.05 INTENT**

- a. It is the intention of the Specifications and Drawings to call for finished work tested and ready for operation, and / or continuation.
- b. Any apparatus ,appliance , material , or work not shown of drawings but mentioned in the Specifications or vice versa , or any incidental accessories necessary to make the work complete in accordance with the scope set forth elsewhere , even if not particularly specified , shall be furnished , delivered and installed by the CONTRACTOR without additional expenses to the Owner.
- c. Minor details not usually shown or specified but necessary for proper installation and operation shall be included in the Contractor's estimate, the same as if herein specified shown.
- d. With submission of bid, the CONTRACTOR shall give written notice to the Architect of any materials or apparatus believed inadequate or unsuitable in violation of laws, ordinances, rules and necessary items of work omitted. In the absence of such written notice, it is mutually agreed that the CONTRACTOR has included the cost of all required items in his proposal and that he will be responsible for the approved satisfactory functioning of the entire system without extra compensation.

#### **1.06 DRAWINGS**

- a. The Drawings accompanying this specifications, addendum drawings and additional detail or clarification drawings as may be subsequently prepared by the ARCHITECT and shop drawings as may be submitted by supplier and / or manufacturer are hereby made part of this specifications.
- b. The DRAWINGS are diagrammatic and indicate the general layout of the system and the CONTRACTOR shall be responsible for the proper installation of the system

without substantial alterations or modifications. The Contractor shall follow drawings in laying out work and check drawings of the other trade to verify spaces in which work will be installed. Whether field conditions or exigencies of construction make departure from these specifications and other drawings necessary, detail of such departure and reason thereof shall be submitted without delay to the Architect and no departure shall be made without written approval of the ARCHITECT.

- c. If directed by the ARCHITECT, the CONTRACTOR shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trade or for proper execution of the work.
- d. The Drawings and these Specifications are complementary to each other and what is called for by one shall be binding as if call for by both. Any apparent conflict between the Drawings and this specifications and unclear points of either shall be referred to the ARCHITECT for final decision.

#### **1.07 EXTRA WORK AND CHANGE ORDERS**

Cost estimates of all extra works and change order that are deemed necessary during the progress of the work shall be submitted to the Owner for approval at least ten (10) days before any work shall be started, or within a reasonable length of time so as not to impede the progress of the work.

#### **1.08 TEMPORARY FACILITIES**

The CONTRACTOR shall make all arrangements and pay for the provisions of the necessary electricity required for the work and shall clean all temporary installation before or upon completion of the work.

#### **1.09 INSPECTIONS AND TESTS**

The ARCHITECT or his representative shall be allowed access to all parts of the work at all times and shall be furnished such information and assistance by the CONTRACTOR as may be required to make a complete detailed inspection. Materials and installation shall be subject to such test as are deemed necessary by the ARCHITECT to properly ascertain their fitness both during installation and after installation is complete. The cost of such test shall be done by the CONTRACTOR.

#### **1.10 LEAVING THE SITE**

The CONTRACTOR shall not withdraw from the site until the OWNER has agreed that no further work is necessary at the time.

#### **1.11 SUSPENSION OR DELAYS**

The Contractor shall not suspend or fail to make proper progress with the work without justifiable cause. The OWNER in the event of delay or suspension of work still persisting after written complaint, in accordance with existing laws and regulations shall have the right to take over the work and all materials of the site and make arrangements as are necessary to have the work completed by others.

#### **1.12 CLEANING UP**

During the process of the work and of the completion of the project, the CONTRACTOR shall remove from the premises all dirt, debris, rubbish and waste materials caused by him in the performance of his work. He shall remove all tools, scaffolding and surplus materials after completion and acceptance of the work.

## **PART 2 – GENERAL REQUIREMENTS (ELECTRICAL)**

### **1.01 CODES AND REGULATIONS**

The installation specified herein shall comply with the following, which are hereby Made Part of this Specification:

- a. All laws and regulations applying to electrical installation in effect.
- b. The provisions of the latest approved edition of the Philippine Electrical Code, Part I and Part II.
- c. The ordinances, rules and regulations of Malolos City and the local utility company concerned.

### **I. PERMITS AND APPROVAL**

The installation specified herein shall comply with the following, which are hereby made part of this specification.

The CONTRACTOR shall obtain at his own expense all permits required by the Government Authorities. Work shall not be started unless the plans have been approved by said authorities and a valid wiring permit has been issued.

## ***D. PART 3 – WORK STANDARDS***

### **1.01 STANDARD OF WORKMANSHIP**

- a. The contractor shall execute all work in a neat and workmanlike manner and shall do all Necessary work whether it is clearly specified in these specifications or shown on the drawing or not. All works shall be done in accordance with the best practices employed in modern electrical installations.
- b. The CONTRACTOR shall employ only competent and efficient workmen using proper tools and equipment. A license Electrical practitioner shall be assigned and maintained at the jobsite during the entire course of the project and shall Upon written request of the ARCHITECT, discharge or otherwise remove from works any Employee who is, in the opinion of the ARCHITECT, careless or incompetent, or who obstructs the progress of work or acts contrary to instructions or conducts himself Improperly.

### **1.02 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK**

Any defective work whether the result of poor workmanship, defective materials, damage through carelessness or any other cause, found to exist prior to acceptance of, or final payment for, the work shall be removed immediately and replaced by work and materials which shall conform to these specifications, or shall be otherwise remedied in acceptable manner. This clause shall have full effect regardless of the fact that the work may have been done with the Full knowledge of the ARCHITECT or the Implementing Agency.

### **1.03 COORDINATION WITH OTHER CONTRACTORS**

The CONTRACTOR shall arrange his work and dispose his materials so as not to interfere with the work or storage of materials of the other Contractors.

If the CONTRACTOR installs his electrical work before coordinating with the work of other trades, he shall make necessary changes in his work to correct the condition without extra charge.

## **PART 4 – MATERIALS**

### **1.01 STANDARD OF MATERIALS**

All materials shall be new and shall conform to the technical specifications. All materials shall be the standard products of reputable manufacturers. All local materials shall bear the PS mark when such standards have been set. All materials of foreign origin shall bear marks of approval by standards agencies of the Country of origin.

### **1.04 EQUIVALENTS**

- a. Where the Technical Specifications or the Drawings give the name of the manufacturers and / or catalog number of materials, it is given as a guide to the size, strength, quality or class of the materials, desired and shall be interpreted to mean that item or another fully equal for the service intended. Substitution shall be subject to prior written approval of the ARCHITECT.
- b. The apparent silence of the Specification and Drawings as to any detail, or apparent omission from them of a detailed description concerning any materials shall be required to mean that only material of first class quality shall be used.

### **1.05 APPROVAL**

- a. All materials shall be subject to the approval of the ARCHITECT. All materials and equipment installed without prior approval of the ARCHITECT shall be at the risk of subsequent rejection.
- b. Approval by the ARCHITECT shall not relieve the CONTRACTOR of the responsibility of inspecting such materials for defects or non-conformance with the Specifications.

### **1.06 DEFECTIVE MATERIALS**

- a. All materials not conforming to the requirements of the Specifications shall be considered as defective.
- b. No defective material, the defect of which has been subsequently corrected, shall be re-used until the ARCHITECT has given approval.

## **PART 5 - SUBMITTALS**

The CONTRACTOR shall, within twenty-five (25) days after the award of the contract, submit for the approval of the ARCHITECT a list of materials he proposes to use in the Work, including such samples, catalog, drawings, and descriptive data as far be required by the ARCHITECT.

### **1.01 SHOP DRAWINGS**

The CONTRACTOR shall submit to the ARCHITECT with such promptness as not to cause delay in his work or in that of any CONTRACTOR, three (3) copies of all shop Drawings and the schedules required by the work. Shop drawings shall be

submitted on all major pieces of electrical equipment, specifically panel boards, wire ways, and gutters, all fabricated items. The shop drawing shall give complete information on the proposed Equipment. Each item of the drawing s shall be properly labeled, indicating the intended service of the material, the job name, and Contractor's name.

The CONTRACTOR shall make any corrections require by the ARCHITECT and submit three (3) corrected copies and other copies as needed. The Architect's approval of such drawings shall not relieve the CONTRACTOR of responsibility for deviation from the drawing and specifications unless he has in writing called attention to such deviation at the time of submission nor shall it relieve him of responsibility for errors of any sort.

**1.02 "AS-BUILT" DRAWINGS**

Upon substantial completion of the project, the CONTRACTOR shall submit to the OWNER three (3) sets of "AS-BUILT" Drawings showing all changes and deviations from the contract drawings duly signed and sealed by the Engineer in charge. The "AS-BUILT" Drawings shall be identical to the contract drawings except for the said changes and deviations. An initial layout should be submitted on A3 size paper for checking and approval of PMO.

Final' As-Built Plans" on A3 size and CD (soft & Hard copies) upon final testing and commissioning shall be submitted as a requirement prior to the final acceptance of the project.

**1.03 CERTIFICATION OF FINAL INSPECTION AND APPROVAL**

After completion of the work, the CONTRACTOR shall furnish the OWNER with a Certificate of Final Inspection and Approval issued by the Government Authorities who issued the wiring permit and shall pay all inspection fees, other penalties which said authorities may impose.

**1.04 GUARANTEE**

The CONTRACTOR shall furnish the OWNER a written guarantee covering the satisfactory operation of the electrical installation in all its parts for a period of one (1) year from the date of final certificate of approval issued by government authorities having jurisdiction or from the date of final acceptance by the owner whichever comes first. During this period, the CONTACTOR shall repair or replace any defective work and pay for any repair or replacement costs. Included with this guarantee certificate shall be the guarantee certificate of the materials suppliers employed by this trade. Should any part of the work be accepted and occupied or utilized by the owner prior to the final acceptance, the guarantee period for that portion of the work shall commence on the mutually acknowledged date of said acceptance, use or occupancy.

**PART 6 – PROTECTION**

**1.01 CONTRACTOR'S WORK AND MATERIALS**

The CONTRACTOR shall protect all his work and material from loss, injury or defacement. Any cost, damaged or defaced material shall be replaced by the CONTRACTOR at his own expense.

**1.02 INJURY TO PERSONS OR DAMAGE TO PROPERTY**

The CONTRACTOR shall be responsible for all injury to persons and damage to property caused by the works or by workmen and shall be liable for any claims against the owner on account of such injury and or damage.

The CONTRACTOR shall likewise take necessary precautions to protect the property of the OWNER against rain or other inclemency of the weather and against theft. Where exposure to such inclement weather or theft is due to the performance of his work, the CONTRACTOR shall be liable for any such damage or loss.

**SECTION 9.2 BASIC MATERIALS AND METHOD**

**PART 1 – RACEWAY MATERIALS AND WORKMANSHIP**

**1.0 GENERAL**

Install a complete raceway system as shown on the drawings and stated in other section of the Specifications. All materials used in the raceway system shall be new and the approved material for the service intended.

**1.02 MATERIAL SPECIFICATIONS**

Raceway materials shall be as hereunder specified:

- a. Rigid Steel Conduit (RSC) shall be hot-dipped galvanized manufactured to U.L and ANSI Standard, 3 meters in length, taper threaded at both ends with one coupling, conduit shall be of approved brand, or any PS approved local equivalent.
- b. PVC Conduit shall be schedule 40 or thick wall un-plasticized PVC (up) pipe 3 meters in length for electrical use (red, orange), it shall be suitable for installation in concrete slab and manufactured to PSA Standard.
- c. Flexible PVC Conduit shall be corrugated Polyvinyl Chloride (PVC) and shall be manufactured to applicable PSA Standard.
- d. Fittings for rigid steel conduit shall be U.L listed or PS approved local equivalent. Connectors and coupling shall be approved for the purpose, U.L listed.
- e. Other raceway not mentioned above but called for of the drawings shall be as specified thereon.

**1.03 INSTALLATION**

- a. Not more than four (4) 90 degrees bends shall occur in any run. When it becomes necessary to have more than (4) 90 degree bends in any run, an intermediate pull box shall be free of dents or flattening. Field bends shall not be allowed for conduits larger than 20 mm dia. trade size except by hydraulic or motor operated benders.
- b. All raceways run shall be in floors, ceilings and walls. Embedded runs shall be installed in such manner as not to weaken or interfere with the structure of the building. No horizontal runs of embedded conduit or tubing shall be permitted in solid walls and partitions. Concealed raceways shall be run in as direct manner and with as long a bend as possible. Exposed raceways shall be run parallel to or at right angle with line of the building. Where raceways cross building joints, furnish and install expansion fittings for contraction, expansion and settlement.



- c. Raceway shall be of ample size to permit the ready insertion and withdrawal of conductors without abrasion. All joints shall be cut square, reamed smooth, and drawn up tight.
- d. Open ends shall be capped with suitable seals as soon as installed and keep capped until ready to install conductors. A no.14 galvanized iron or steel fish wire shall be left in all conduits in which the permanent wiring is not installed.
- e. Hangers and supports
  - 1. Raceway shall be securely and rigidly supported to the building structure in a neat and workmanlike manner and wherever possible, parallel runs of horizontal raceways shall be grouped together of adjustable trapeze hangers. Support spacing shall not be more than 3,000 mm.
  - 2. Exposed raceways shall be supported by one – hole malleable iron straps, two hole straps, suitable beam clamps, or split-ring hangers with support rod. Multiple runs shall be grouped together of trapeze hangers where possible.
  - 3. Single raceway 32 mm dia. and larger run concealed horizontally shall be Supported by suitable beam clamps or split-ring hangers with support rod. Multiple runs shall be grouped together of trapeze hangers where possible.
  - 4. Raceways 25 mm dia. and smaller run concealed above a ceiling may be supported directly to the building structure with strap hangers or no. 14 gauge galvanized wire provided the support spacing does not exceed 1220 mm.
  - 5. Raceways shall be firmly supported and fastened at three (3) meter intervals and within 0.90 meter of each outlet or cabinet.
- f. Coupling and connection to boxed and cabinets
  - 1. Metallic conduit shall be securely fastened to all metal outlets, junction and pull boxed with galvanized locknuts and bushings, care being observed to see that the full number of threads project through to permit the bushing to be drawn tight against the end of the conduit, after which the locknuts shall be made up sufficiently tight to draw the bushings into firm electrical contact with the box.
  - 2. Electric metallic tubing shall not be coupled together nor connected to boxes, Fittings, or cabinets by means of threads in the wall of the tubing. Only fittings approved for the purpose shall be used. Thread less couplings and connectors used with the tubing shall be of the concrete tight type where not exposed to the weather and rain tight type where exposed to the weather.
  - 3. Metallic raceway shall be continuous from outlet from outlet to outlet to Cabinets or junction or pull boxed in such a manner that each system shall be electrically continuous throughout.
  - 4. Non-metallic raceway shall be securely fastened to outlet boxes, junction and pull boxed with proper adapters to permit the installation of metallic bushings.
- g. Other raceways shall be installed in the manner prescribed in the latest approved edition of the Philippine Electrical Code (PEC), in accordance with the best practices employed in modern electrical installations, and in accordance with the manufacturer's instructions.

## **PART 2 – OUTLET BOXES**

### **1.01 GENERAL**

Install all junction and outlet boxes as shown of the drawings or as required by the construction. The drawings indicate only the approximate location of each fixture, receptacle, special purpose outlet and wall switch. The exact location shall be determined later at the site as the work progresses. The right is reserved by the Architect to change the exact location of any switch, light outlet, receptacle outlet and any other outlet in any room before the same is installed. If any outlet is installed by the contractor in such a manner as to be out of proper relation to the beams, walls, or other details of the building construction its position or location shall be corrected by and at the expense of the CONTRACTOR and under the direction of the ARCHITECT.

#### **1.02 MATERIAL SPECIFICATIONS**

Outlet and junction boxed shall be galvanized, pressed- steel boxed where not exposed to the weather and case metal boxed where exposed to the weather as in outdoors or roof deck installations. Minimum thickness of pressed-steel boxes shall be 1.6 mm and case metal boxes shall be at least 3.2 mm thick. The boxes shall be complete with the approved type of connectors and required accessories. Cast metal boxes shall have threaded hubs.

- a. Boxed shall be of approved design and construction, and of such for and dimensions as required to serve the kinds of devices or fixtures to be used and the number, size and arrangement of conduits connecting thereto. The allowable conduits fill as given in section 5.7.2.2 of the Philippine Electrical Code shall not be exceeded. Deep boxes, box rings and raised plastic covers shall be used, when necessary, to obtain required conductor capacity.

#### **1.03 INSTALLATION**

- a. Receptacle Outlet Boxes. Wall receptacles shall be mounted approximately 300 mm above the finished floor (AFF) at center unless otherwise noted.  
All receptacle outlet boxes shall be equipped with grounding leaf which shall be connected tag rounding terminal of device; the leaf shall be properly bonded to the box and to the separate ground wire if any.
- b. Switch Outlet Boxes. Wall switch shall be mounted approximately 1200mm above the finished floor (AFF) at center unless otherwise noted. When the switch is mounted in a masonry wall, the bottom of the outlet box shall be in line with the bottom of a masonry unit.
- c. Lighting Fixture Outlet Boxes. The lighting fixtures outlet boxes shall be furnished with the necessary accessories to install the fixture. The support must be such as not to deepen of the outlet box supporting the fixture. The supports for the lighting fixtures shall be independent of the ceiling system.
- c. Boxed for outlet of auxiliary systems shall be as specified elsewhere in these Specification or as shown on the drawings.

### **PART 3 – PULL BOXES, WIREWAYS AND AUXILIARY GUTTERS**

#### **1.01 GENERAL**

- a. Pull boxes shall be installed at all necessary points, whether indicated of the drawings or not, to prevent injury to the insulation or other damage that might result from pulling resistance or for other reasons necessary to proper installation. Pull box locations shall be approved by the ARCHITECT prior to installation. Minimum dimensions shall not be less than PEC requirements and shall be

increased if necessary for practical reasons or where required to fit a job condition.

- b. Wire ways shall be used where indicated of the drawings or as require by the construction.
- c. Auxiliary gutters shall be used to supplement wiring spaces as require by the construction or as indicated of the drawings.

#### **1.02 CONSTRUCTION SPECIFICATIONS**

- a. All pull boxes, wire ways and auxiliary gutters shall be constructed of galvanized sheet steel, with minimum thickness of 1.2 mm, and painted inside and outside to prevent corrosion.
- b. Covers shall be attached to the box with a suitable number of countersunk Flathead machine screws. Screws which may cause injury to the insulation shall not be used.
- c. Each circuit in box shall be marked with a tag guide denoting panels to which they connect.

### **PART 4 – CONDUCTOR MATERIAL AND WORKMANSHIP**

#### **1.01 GENERAL**

Provide and install a complete wiring system shall be of soft- annealed copper having a conductivity of not less than 98 % of that of pure copper and insulated for 600 volts.

#### **1.02 CONDUCTOR SPECIFICATIONS**

- a. Conductors used in the wiring system shall be of soft-annealed copper having conductivity of not less than 98 % of that of pure copper and insulate for 600 volts. (THW/THWN) or approved equal.
- b. The wires and cables shall be delivered to the site in its original package Whenever possible, plainly marked or tagged as follows.
  - 1. Size, kind, and insulation of wire
  - 2. Name of the Manufacturer
  - 3. Trade name of wire

#### **1.03 CONDUCTOR WORKMANSHIP**

- a. Install conductors in all raceways as required to a neat and workmanlike manner. Empty conduits, as noted, shall have a No. 14 gauge galvanized pull wire left in place for future use. No wires shall be drawn into the raceways until all works which may cause injury to the wire are completed.
- b. Conductors shall be color-coded in accordance with the PEC. Or as indicated. Main feeders and Sub-feeders shall be tagged in all pull junction, and outlet boxed and in the gutter of panels with approved wire markers.
- c. No lubricant other than powdered soapstone or approved pulling compound may be used to pull conductors.
- d. At least 200 mm of slack wire shall be left in every outlet box whether it be In used or left for future use.
- e. All conductors and connection shall test free of grounds, shorts and opens Before turn over the job to the owner.
- f. Branch circuit splices shall be soldered or joined by the used of insulate

Splicing devices (wire nuts). All soldered joints shall be made mechanically strong before soldering and shall be carefully soldered without the use of acid, then tape with plastic tape to a thickness equal to or exceeding that of the insulation.

- g. Unless otherwise indicated in the drawings or specified number of conductors constituting a single circuit or branch shall be drawn in one conduit.

## **SECTION 16.3 SERVICE ENTRANCE AND DISTRIBUTION SYSTEM**

### **PART 1 – SERVICE ENTRANCE**

#### **1.01 GENERAL**

Provide and install a complete service entrance system as shown on the drawings and as required for a complete system. All materials and workmanship shall conform to the **Philippine Electrical Code (PEC)**, and the local laws and regulations. The electric service entrance shall conform to the requirements and regulations of the electric utility serving the project.

#### **1.02 MATERIALS**

- a. Conduit used for service-entrance shall be galvanized rigid steel conduit (RSC), or approved equal.
- b. Conductors for service entrance shall be copper, type THWN, THNN or approved equal.

#### **1.03 SCOPE**

- a. Verify with the electric utility company serving the project the point of connection to the utility facilities before preparing the bid and include therein all work entailed for such connection.
- b. Metering and transformer facilities include all materials, labor, electrical Permit and charges that the utility company and municipality may require for the purposed of installing metering connection shall be shouldered by the owner and not the contractor.

### **PART 2 – FEEDERS AND BRANCH CIRCUITS**

#### **1.01 GENERAL**

Provide and install complete electrical feeders, sub-feeders and branch circuits as shown on the drawings or as required for a complete system. All materials and workmanship shall conform to the specification, the **Philippine Electrical Code (PEC)**, and the local laws and regulations.

#### **1.02 MATERIALS**

- a. Raceways shall be indicated on the drawings.
- b. Conductor type shall be as indicated on the drawings. No wire smaller than 2.0 mm diameter or 3.5 square mm (AWG No. 12) shall be used for lighting or power circuit except for grounding and switch connection. Conductors smaller than 3.5 square mm shall be solid and conductors 5.5 square mm and larger shall be stranded.

### 1.03 INSTALLATION

- a. Feeder conductors and raceways shall be installed as shown on the drawings and no change in size shall be made without written consent of the ARCHITECT. Feeder conductors shall be continuous, and without splices between terminals unless expressly indicated in the drawings. When feeders are run in multiple, they shall be exactly of the same length to avoid unbalanced division of the current.
- b. The drawings indicate the general methods of installation of all circuit wiring and the outlet which are to be supplied for these circuits. Branch circuit raceways shall be run from outlet to panel boards as direct as the building conditions will allow. Circuit allocations shall be as indicated on the drawings. Where it becomes necessary to connect any outlet to a circuit other than the one shown on the drawings, this shall be done without extra charge and only upon written consent of the ARCHITECT. All lighting outlet shall be supplied from single – phase circuits. Number of wires for all circuits shall be as indicated on the drawings.

## PART 3 – ENCLOSED CIRCUIT BREAKERS

### 1.01 GENERAL

Furnish and install individual Enclosed Circuit Breaker (ECB) as indicated on the drawings or as required. All ECB for 3-phase load have a common trip and grounding terminal.

### 1.02 MATERIAL SPECIFICATIONS

Enclosed Circuit Breaker shall be industrial type or approved equal. Also approved by the Bureau of Product Standard with Nema enclosure and shall exhibit the “PS” marks as proof thereof.

### 1.03 INSTALLATION

The Enclosed Circuit Breaker shall be flush mounted / wall mounted or in Accordance with the Philippine Electrical Code. The CONTRACTOR shall Provide all mounting materials.

## PART 4 – PANEL BOARDS – CIRCUIT BREAKERS

### 1.01 GENERAL

Furnish and install circuit breakers in a **Panel Board** assembly as indicated in a load schedule and where shown on the drawings.

### 1.02 MATERIAL SPECIFICATIONS

- a. The **Panel Board** assembly shall be dead-front, industrial type, equipped with Molded –Case Circuit Breakers (MCCB), 240 Volts, Three (3) - phase in NEMA 1 enclosure made from B.I sheet Ga # 14 and finished in powder coated beige paint or approved equal. It shall be the type as indicated in the detailed drawings and load schedules.
- b. Provide molded-case circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. Also provide the number of spaces for future circuit breakers as shown in the load schedule. The circuit breakers shall be

- quick-make, quick-break, thermal magnetic trip indicating, and have a common trip on all multiple breakers with internal trip mechanism.
- c. Bus bar connections to the branch circuit breakers shall be the phase-sequence type. Single-phase three wire bus barring shall be such that any two adjacent single-pole breakers are connected to opposite polarities in such a manner that two- pole breakers can be installed in any location. Three-phase four- wire bus barring shall be such that any three adjacent single-pole breakers are individually connected to each of the three different phases in such a manner that two or three- pole breakers can be installed in any location. All current-carrying parts of the panel boards shall be plated. Provide solid neutral (S/N) assembly when required. The assembly shall be isolated from the enclosure.
  - d. Terminals for feeder conductors to the panel board mains and neutral shall be suitable for the type of conductor specified. Terminal for branch-circuit wiring both breaker and neutral shall be suitable for the type of conductor specified.
  - e. The Panel board bus assembly shall be enclosed in a steel cabinet. The size of the wiring gutters and gauge of steel shall be in accordance with NEMA Standards. And shall be fabricated from galvanized steel or equivalent rust resistant steel. The fronts shall include doors and have metering devices as required and monitor pilot lamps.
  - f. On the inside of the steel cabinet, provide a typewritten panel directory which will indicate the location of the equipment or outlet supplied by each circuit. The directory shall be mounted in a metal frame with a non breakable transparent cover.
  - g. All circuit breakers shall be FUJI, GE, CUTLLER HAMMER, SQUARE-D Or approved equal. There shall be no intermixing of circuit breakers brand.

### **1.03 INSTALLATION**

- a. Before installing panel boards, check all the architectural drawings for possible conflict of space. Adjust the location of the panel boards to prevent such conflict with other items.
- b. When the panel boards is recessed into a wall serving an area with accessible. Ceiling space, provide and install an empty conduit system for each spare circuit for future wiring. A 1 ¼ inch conduit shall be stubbed into the ceiling space above the panel board's as such accessible ceiling space exists.
- c. The panel boards shall be mounted in accordance with Article 5.8 of the Philippine Electrical Code. Furnish all materials for mounting the panel boards.

## **PART 5 – WIRING DEVICES**

### **1.01 GENERAL**

Furnish and install all wiring devices and plate as called for on the drawings and as specified herein.

### **1.02 MATERIAL SPECIFICATIONS**

- a. Switched shall be 10A, 250V except as otherwise noted. Terminals shall be screw- type or quick-connect type.

- b. General use receptacle shall be 15A, 250V grounding type unless otherwise indicated on the drawings. Terminal shall be screw– type or quick–connect type.
- c. Special purpose receptacles shall be as called for on the Drawings. Matching twist lock plugs shall be supplied.

### **1.03 INSTALLATION**

- a. Mounting height shall be as follows unless otherwise noted on the Drawings:
  - 1. Wall switch - 1.20 meters above floor finish
  - 2. Receptacles – 0.30 meter and 1.80 meter for wall Fan outlet above floor finish, except above counter.
- b. For screw type devices, the wire connected thereto shall be formed into a clockwise loop to fit around the screws. For quick - connect devices the exact length of wire shall be stripe of insulation and then pushed in.

## **PART 6 LIGHTING**

### **1.01 GENERAL**

Furnish, install and connect all lighting fixtures to the building wiring system  
Unless otherwise noted.

### **1.02 SPECIFICATION**

- a. Fixture type shall be as indicated on the Drawings.
- b. Fluorescent ballast shall be pre-heat, high power factor or high frequency (electric) energy saving type. The ballast shall be subject to one (1) year manufacturer’s guarantee. The guarantee shall be filed with the Owner. The ballast shall indicate Bureau of Product Standards approval with “PS” Mark.
- c. Fluorescent fixture housing shall be G.A 22 minimum, with baked enamel and aluminum louver Finish.
- d. Down lights and pin lights shall be of heavy gauge spun aluminum with wooden plaster level and equipped with the lamp type indicated on the drawings. Pin lights shall have no live parts exposed at the back of the fixtures. Minimum opening diameter shall be 150 mm and minimum depth shall be 200mm.
- e. Fluorescent lamps shall be moisture/dust proof, cool type unless otherwise noted and lamp holders shall be made of thermosetting plastic.
- f. Special lighting requirements shall be as call for the Drawings.

### **1.03 INSTALLATION**

Coordinate with the ceiling Contractor and the General Contractor in order that the proper type of fixture be furnished to match the ceiling system or building construction materials.

- a. Contain all necessary relays, meters, resistance, and thermal cutouts, terminals and fuses for the control and double supervision of the system. Panel shall contain the number of zone and station circuits required. A trouble bell shall be provided for external connection.
- b. All interior wiring shall be in strict accordance with the NFPA Codes 72 and all local electrical and fire codes applying. Size and number of wire shall be in

- accordance with the wiring diagram supplied by manufacturer of fire alarm system, but shall not be less than as shown on the drawings.
- c. All materials and equipment shall be U.L listed.

- END -

Prepared by:

**Ma. Victoria V. Umali**  
Civil Engineer, PMO

Submitted by:

**Ar. Ma. Saturnina C. Parungao**  
Director, PMO

Approved by:

**Dr. Mariano C. De Jesus**  
BulSU - President

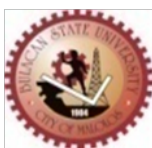
Conforme:

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**CONTRACTOR**



Drawing



**BULACAN STATE UNIVERSITY**  
**Project Management Office**  
City of Malolos, Bulacan



Project: **PROPOSED BSU SCIENCE RESEARCH & LEARNING CENTER**  
**Construction Floor Area = 714.00 sq.m.**  
Owner: **Bulacan State University**  
Location: **Guinhawa, Malolos, Bulacan**

Item No.	Description	Qty	Unit	Unit Price	Amount
<b>A.</b>	<b>Siteworks</b>				
1.00	Survey Works		lot		
2.00	Site Clearing		sm		
3.00	Staking and Layout		sm		
	<b>Sub-Total</b>				
<b>B.</b>	<b>Earthworks</b>				
1.00	Excavation		cm		
2.00	Backfilling & Compaction		cm		
3.00	Hauling and Disposal		cm		
4.00	Gravel Bedding		cm		
5.00	Soil Treatment		sm		
	<b>Sub-Total</b>				
<b>C.</b>	<b>Concrete Works</b>				
1.00	Concrete Reinforcement				
	10mmØ Reinforcing Steel Bars		kgs		
	12mmØ Reinforcing Steel Bars		kgs		
	16mmØ Reinforcing Steel Bars		kgs		
	20mmØ Reinforcing Steel Bars		kgs		
	25mmØ Reinforcing Steel Bars		kgs		
	#16 GI Tie Wire		kgs		
2.00	Concrete Formworks				
	2" x 3"/ 2" x 2" Form Lumber		bd ft		
	Ordinary Plywood 1/2' x 4' x 8'		shts		
	CW Nails		kgs		
	For Scaffolding				
	2" x 3"/ 2" x 2" Form Lumber		bd ft		
	CW Nails		kgs		
3.00	Cast-In-Place Concrete				
a.	Footing				

	Cement		bags		
	Sand		cm		
	Gravel		cm		
b.	Column				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
c.	Footing Tie Beam				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
d.	Wall Footing				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
e.	Beams				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
f.	Slab-on-Grade				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
g.	Suspended Slab				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
h.	Stair				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
i.	Canopy				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
	<b>Sub-Total</b>				
<b>D.</b>	<b>Masonry Works</b>				
1.00	100mm thk CHB		pcs		
2.00	150mm thk CHB		pcs		

3.00	10mmØ Reinforcing Steel Bars		kgs		
4.00	Cement		bags		
5.00	Sand		cm		
	<b>Sub-Total</b>				
<b>E.</b>	<b>Metal Works</b>				
1.00	At Corridor				
	50mm x 100mm Rectangular Tubing (Painted)		lm		
2.00	50mmØ SS Pipe Hand Railing for Stair		lm		
	Compressor Housing				
	50mm x 100mm Rectangular Tubing (Painted)		lm		
	Flat Bar 50mm x 3mm		lm		
	Square Bar 50mm x 50mm		lm		
3.00	Consumables		lot		
	<b>Sub-Total</b>				
<b>F.</b>	<b>Thermal &amp; Moisture Control</b>				
1.00	Roofing				
	Steel Truss		kgs		
	Gusset Plate 6mm thk MS Plate		kgs		
	LC 150 x 50 x 20 x 2mm Purlins with Connectors		kgs		
	Sag Rod 12mmØ		kgs		
	Cross Bracing 16mmØ		kgs		
	Turnbuckle		pcs		
	Roofing GI Sheets Rib-Type Ga #24				
	x 12'		shts		
	x 13'		shts		
	GI Rivets 5/32" x 1/2"		boxes		
	GI Flashing x 8' Pre-painted		pcs		
	GI Gutter x 8' Pre-painted		pcs		
	Consumables		lot		
2.00	Waterproofing				
	Male & Female Comfort Rooms		sm		
	<b>Sub-Total</b>				
<b>G.</b>	<b>Doors and Windows</b>				
1.00	D1 - 1.00m x 2.15m Double Swing Door with Fixed Wired Glass		sets		
2.00	D2 - 0.90m x 2.10m Wooden Flush Door		sets		
3.00	D3 - 1.00 x 2.15m PVC Door with Vent Louver		sets		
4.00	D4 - 0.80m x 2.15m PVC Door with Vent Louver		sets		

5.00	D5 - 0.80m x 2.15m Wooden Flush Door		sets		
6.00	D6 - 1.0m x 2.15m Wooden Flush Door		sets		
7.00	W1 - 1.50m x 0.40m Aluminum Sliding Window with 1/4" thick Tinted Glass		sets		
8.00	W2 - 3.60m x 0.40m Aluminum Sliding Window with 1/4" thick Tinted Glass		sets		
9.00	W3 - 2.80m x 1.20m Aluminum Sliding Window with 1/4" thick Tinted Glass		sets		
10.00	W4 - 1.10m x 0.40m Aluminum Awning Window with 1/4" thick Tinted Glass		sets		
11.00	W5 - 0.60m x 0.40m Aluminum Awning Window with 1/4" thick Tinted Glass		sets		
12.00	W6 - 2.80m x 0.40m Aluminum Awning Window with 1/4" thick Tinted Glass		sets		
	<b>Sub-Total</b>				
<b>H.</b>	<b>Finishes</b>				
1.00	Wall Finishes				
a.	Plaster & Render (including columns, beams, canopy, parapet)				
	Cement		bags		
	Sand		cm		
2.00	Celing Finishes				
	12mm thk. Gypsum Board		pcs		
	Metal Furring Frame		sm		
	G.I. Rivets		kgs		
3.00	Tiling Works				
	0.40m x 0.40m Ceramic Floor Tiles		pcs		
	0.30m x 0.30m Ceramic Floor Tiles		pcs		
	0.30m x 0.30m Ceramic Wall Tiles		pcs		
	0.30m x 0.30m Ceramic Tiles at Stair		pcs		
	Concrete Topping				
	Cement		bags		
	Sand		cm		
	Tiles Filler & Paste				
	White Cement		kgs		
	Cement		bags		
	Stair Nosing		lm		
4.00	Painting Works				
a.	Steel		sm		
	Epoxy Primer		gals		
	Flat Wall Enamel		gals		
	Semigloss Enamel		gals		

	Paint Thinner		gals		
b.	Concrete/ Masonry		sm		
	Flat latex		gals		
	Latex		gals		
	Putty		gals		
c.	Consumables		lot		
5.00	Plant Box		lm		
	<b>Sub-Total</b>				
<b>I.</b>	<b>Electrical Works</b>				
1.00	Lighting Fixtures				
	Fluorescent Lamp /W,LED Tubes- Lemnis ESLRW 2X 40		sets		
	Circular Recessed LED Downligh/Pinlight (12 Watts)		sets		
	Emergency Light w/ re-chargeable battery		sets		
	Orbit Fan Unit/ 16 " dia. w/ control		sets		
2.00	Wiring Devices				
	One Gang Switch/S		sets		
	Two Gang Switch /S2		sets		
	Three Gang Switch/ S3		sets		
	One Gang 3- Way Switch/ S3w		sets		
	Duplex Convenience Outlet		sets		
	Pop- UP Floor Convenience Outlet		sets		
	Aircon Outlet w/ C.B,Heavy Duty		sets		
3.00	Wires (THHN/THWN)				
	100 mm <sup>2</sup> THHN wire		lm		
	30 mm <sup>2</sup> THHN wire		lm		
	30mm <sup>2</sup> TW Wire, Grnd.Wire-White		lm		
	8.0 mm <sup>2</sup> TW Wire, Grnd.Wire-White		lm		
	5.5 mm <sup>2</sup> THHN wire (150 mtr./roll)		Box		
	3.5 mm <sup>2</sup> THHN wire (150 mtr./roll)		Box		
	2.0 mm <sup>2</sup> THHN wire (150 mtr./roll)		Box		
4.00	Conduit (Schedule 40)				
	20 mm Ø Flexible Conduit Pipe		roll		
	20 mm Ø Conduit Pipe/PVC		pcs		
	40mm Ø UPVC - hard plastic		pcs		
	40 mm Ø PVC 90° Short& Long Elbow hard plastic		pcs		

	40 mm Ø Straight Connector with Locknut & Bushing PVC		pcs		
	65 mm Ø UPVC - hard plastic		pcs		
	65 mm Ø PVC 90° Short& Long Elbow hard plastic		pcs		
	65 mm Ø Straight Connector with Locknut & Bushing PVC		pcs		
	65 mm Ø RSC for Service Entrance(Nikkon Brand)		pcs		
	65 mm Ø RSC Elbow for Service Entrance(Nikkon Brand)		pcs		
	65 mm Ø Entrance Cap		pc		
5.00	Boxes				
	Pull Box,5 mm thick ( 10 X 14 X 8" )		pcs		
	Junction Box, metal gauge # 14		pcs		
	Utility Box, metal gauge # 14		pcs		
	Cable Tie, # 8		boxes		
	Grounding Rod-Galvanized,(5/8" dia. X 3 mtrs )		pcs		
	Grounding Clamp		pcs		
6.00	Panelboards with Name Plate & Directory				
	Main Distribution Panel /MDP				
	225 AT. 225 AF,Molded Case Circuit Bkr.as Center Main				
	3-Phase, 22 Kaic , NEMA-1 w/ lockable enclosure &				
	Powder Coated finished		set		
	Branches: 4- Brs:				
	3-125 AT.CB ,3P				
	1- Lugs only				
	Power Panel /PP-1 & 2				
	100 AT. 100 AF, Circuit Bkr.as Center Main				
	3-Phase, 22 Kaic , NEMA-1 w/ lockable enclosure &				
	Powder Coated finished		sets		
	Branches: 10- Brs:				
	9-30AT.CB ,2P				
	1- SPACE				
	Lighting Panel /LP-1 & 2				
	100 AT. 100 AF, Circuit Bkr.as Center Main				
	3-Phase, 22 Kaic , NEMA-1 w/ lockable enclosure &				
	Powder Coated finished		sets		
	Branches: 14- Brs:				

	12-20AT.CB ,2P				
	2- SPACE				
	Manual Transfer Switch/MTS, Breaker Type,3PDT		set		
	150 AT/225AF,3P.22 kAIC,powder coated finished, with				
	Mechanical Interlock(Industrial type)				
	Enclosed Main Circuit Breaker/EMCB		set		
	250 AT. 400 AF,Main Molded Case Circuit Bkr.				
	3-Phase,22 Kaic ,adjustable setting.NEMA 3R w/lockable				
	enclosure & powder coated finish.(Industrial Type)				
7.00	Others				
	Concrete Pedestal for Service Entrance wire		ls		
	H-Frame Scaffolding		ls		
	Safety net & signage's		ls		
	Electrical Tape & Conduit support		ls		
	Solderless Connector for 200 mm <sup>2</sup>		ls		
	PVC Sealant & Vulcaseal		ls		
8.00	Modification of Exsiting Electrical System		lot		
	<b>Sub-Total</b>				
<b>J.</b>	<b>Plumbing Works</b>				
	Water System				
	25mmØ GI Pipe		pcs		
	15mmØ GI Pipe		pcs		
	25mmØ GI Tee		pcs		
	15mmØ GI Tee		pcs		
	25mmØ GI Elbow		pcs		
	15mmØ GI Elbow		pcs		
	25mm dia. Double thread G.I. Coupling		pcs		
	15mm dia. Double thread G.I. Coupling		pcs		
	Gate Valve		pcs		
	Check Valve		pcs		
	Pressure Tank, 220 gallons		set		
	Water Pump, 2HP		set		
	Water Meter		pcs		
	Fixtures				
	Lavatory		pcs		



	Faucet		pcs		
	Hose Bibb		pcs		
	Water Closet		pcs		
	Urinals		pcs		
	Shower		pc		
	Sanitary System				
	100mmØ PVC Pipe		lm		
	75mmØ PVC Pipe		lm		
	50mmØ PVC Pipe		lm		
	100mmØ PVC Wye		pcs		
	50mmØ PVC Elbow		pcs		
	50mm P-trap		pcs		
	Catch Basins		sets		
	Soil Stack		pcs		
	Floor Cleanout		pcs		
	End Plug		pcs		
	Floor Drain		pcs		
	Miscellaneous		lot		
	12mm thk. Phenolic Board Toilet Partition, complete w/ accessories		sets		
	12mm thk. Phenolic Board Urinal Partition, complete w/ accessories		sets		
	Reflective Wall Mirror with Backing				
	0.60m x 0.60m		sets		
	1.50m x 0.60m		sets		
	Septic Tank				
	Cement		bags		
	Sand		cm		
	Gravel		cm		
	4" CHB		pcs		
	10mmØ Reinforcing Steel Bars		kgs		
	16mmØ Reinforcing Steel Bars		kgs		
	<b>Sub-Total</b>				
	<b>Total Material Cost</b>				
	<b>Add: 30% Labor Cost</b>				
	<i>Additional Labor and Equipment Cost</i>				
<b>A.</b>	<b>Siteworks</b>				

1.00	Survey Works		lot		
2.00	Site Clearing		sm		
<b>B.</b>	<b>Earthworks</b>				
1.00	Excavation		cm		
2.00	Backfilling & Compaction		cm		
3.00	Hauling and Disposal		cm		
<b>C.</b>	<b>Demolition Works</b>				
	Removal of Structures and Obstructions				
	Foreman - 1		days		
	Skilled Laborer - 10		days		
	Laborer - 15		days		
	Hauling and Disposal/ Transfer for Safekeeping		lot		
	Recovery of Salvaged Materials		lot		
	<b>Additional Cost</b>				
	<b>Total Cost (Direct Cost)</b>				
	Add: 17% Indirect Cost				
	<b>Total Cost (Direct + Indirect)</b>				
	Add: 12% VAT				
	<b>TOTAL PROJECT COST</b>				

## Bid Form

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Date: \_\_\_\_\_

IAEB<sup>1</sup> N<sup>o</sup>: \_\_\_\_\_

To: **BULACAN STATE UNIVERSITY**

**Address: Guinhawa, City of Malolos, 3000 Bulacan**

We, the undersigned, declare that:

- (a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract **Proposed BuISU Science Research and Learning Center (Infra-2015-18)**;
- (b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered in item (d) below is: [insert information];

The discounts offered and the methodology for their application are: [insert information];

- (c) Our Bid shall be valid for a period of [insert number] days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of [insert percentage amount] percent of the Contract Price for the due performance of the Contract;

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<sup>1</sup> If ADB, JICA and WB funded projects, use IFB.

- (e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]*;
- (f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;
- (h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- (i) We understand that you are not bound to accept the Lowest Evaluated Bid or any other Bid that you may receive.

Name: \_\_\_\_\_

In the capacity of: \_\_\_\_\_

Signed: \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of: \_\_\_\_\_

Date: \_\_\_\_\_

## Form of Contract Agreement

---

Know All Men by These Present:

This CONTRACT made and executed this \_\_\_\_ day of \_\_\_\_\_ 2015, by and between:

**BULACAN STATE UNIVERSITY**, a state educational institution duly organized and existing under and by virtue of the laws of the Philippines, with principal office and postal address at **Guinhawa, City of Malolos, 3000 Bulacan of the Philippines** represented by its President **MARIANO C. DE JESUS, Ed.D.** (hereinafter called "the UNIVERSITY")

and -

[Name of Contractor], duly organized and existing under the laws of the Philippines, with postal address at [Address of Contractor] represented herein by its Owner & General Manager [Name of the Owner] and by virtue of the powers conferred upon him, hereinafter referred to as the CONTRACTOR.

WHEREAS, the **UNIVERSITY** is desirous that the Contractor execute [Project Title] (hereinafter called "the Works") and the **UNIVERSITY** has accepted the Bid for [Amount of the Contract] hereinafter called ("the Contract Price") by the Contractor for the execution and completion of such Works and the remedying of any defects therein;

WHEREAS, as a measure of guarantee for the faithful performance of and compliance with his obligations under this contract, the **CONTRACTOR** posted performance security in the form of Surety Bond amounting to [Performance Security] which is thirty percent (30%) of the contract price as specified in the Bidding Documents.

### NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of the Contract referred to.
2. Republic Act no. 9184 and its Implementing Rules and Regulations, as amended, as well as the applicable Government Procurement Policy Board Resolutions shall apply to this Contract.
3. **SCOPE OF WORK**
  - 3.1 CONTRACTOR agrees to render the Services enumerated and described in the Construction Specifications and in accordance with the general terms and conditions and made an integral part hereof.
  - 3.2 Plans/Drawings as approved by the UNIVERSITY necessary in the execution of work mutually agreed upon by the UNIVERSITY and CONTRACTOR.
  - 3.3 The CONTRACTOR shall undertake the construction and completion of the PROJECT in full compliance with Contract Documents.

#### **4. WARRANTY**

Section 62 (b) of R.A. 9184: The CONTRACTOR shall assume full responsibility for the contract work from the time project construction commenced up to a reasonable period as defined in the IRR taking into consideration the scale and coverage of the project from its final acceptance by the government and shall be held responsible for any damage or construction of works except those occasioned by force majeure.

The CONTRACTOR shall be fully responsible for the safety, protection, security, and convenience of his personnel, third parties, and the public at large, as well as the works, equipment, installation and the like to be affected by his construction work and shall be required to put up a warranty security in the form of cash, bank guarantee, letter of credit, Government Service Insurance System bond, or callable surety bond. The CONTRACTOR shall undertake the repair works, at his own expense, of any defect or damage to the infrastructure projects on account of the use of materials of inferior quality within ninety (90) days from the time the Head of the Procuring Entity has issued an order to undertake repair. In case of failure or refusal to comply with this mandate, the government shall undertake such repair works and shall be entitled to full reimbursement of expenses incurred therein upon demand.

#### **5. WORK CHANGES**

Variation Orders may be issued by the UNIVERSITY to cover any increase/decrease in quantities, including the introduction of new work items that are not included in the original contract or reclassification of work items that are either due to change of plans, design or alignment to suit actual field conditions resulting in disparity between the preconstruction plans used for purposes of bidding and the "as staked plans" or construction drawings prepared after a joint survey by the CONTRACTOR and the Government after award of the contract, provided that the cumulative amount of the positive or additive Variation Order does not exceed ten percent (10%) of the original contract price.

In claiming for any Variation Order, the CONTRACTOR shall, within seven (7) calendar days after such work has been commenced pursuant to Section 3.2 of the Revised IRR Annex "E" of R.A. 9184; or, within twenty eight (28) calendar days after the circumstances or reasons justifying a claim for extra cost shall have occurred, deliver a notice giving full and detailed particulars of any extra cost in order that it may be investigated at that time.

#### **6. COMPLETION OF WORK**

The CONTRACTOR binds itself to complete the undertaking herein contracted within One Hundred Fifty (150) calendar days commencing on the day the undertaking started, which should not be later than ten (10) calendar days from receipt of the Notice to Proceed;

The CONTRACTOR shall pay the UNIVERSITY for liquidated damages (LD), and not by way of penalty, an amount equal to one-tenth (1/10) of one percent (1%) of the cost of the unperformed portion of the works for every day of delay. The UNIVERSITY shall deduct the liquidated damages from payments or any money due or which may due the CONTRACTOR under this Contract and/or

collect such liquidated damages from the retention money or other securities posted by the CONTRACTOR whichever is convenient to the UNIVERSITY. Once the cumulative amount of liquidated damages reaches ten percent (10%) of the amount of this contract, the UNIVERSITY shall rescind this contract, without prejudice to other courses of action and remedies open to the UNIVERSITY.

## **7. PENAL CLAUSE**

In addition to the Performance Security posted by the winning bidder to guarantee the faithful performance of its obligations under the contract in accordance with the Bidding Documents, the CONTRACTOR shall pay a penalty of 0.5% of the contract price for each day of delay of the project and 1<sup>%</sup> of the same for every breach.

## **8. PROJECT COST AND TERMS OF PAYMENT**

In consideration of the Contract Price mentioned herein to be paid by the UNIVERSITY to the CONTRACTOR, the CONTRACTOR hereby covenants, with the UNIVERSITY, to execute and complete such works and to remedy defect therein in conformity in all respect with the provisions of the Contract;

The Contract Price shall be paid to the CONTRACTOR through the Government disbursement procedure subject to the payment, retention money, and warranty provisions in the General Conditions of Contract, the Special Conditions of Contract, and the IRR of R.A. 9184;

## **9. The following Contract Documents are incorporated hereto and made integral part of this Agreement:**

9.1 The said Bid which is the Form of Bid Accomplished and submitted by the Contractor, including:

- a. Bid Security
- b. Bid Prices in the Bill of Quantities
- c. Detailed Estimates
- d. Valid Philippine Contractor's Accreditation Board (PCAB) License and Registration for the type and cost of the contract for this Project
- e. Organizational Chart
- f. List of Contractor's Personnel
- g. List of Contractor's Equipment
- h. Construction Schedule and S-Curve
- i. Construction Safety and Health Program for this Project
- j. Manpower Schedule
- k. Construction Methods
- l. PERT/CPM
- m. Site Inspection Certificate
- n. Omnibus Sworn Statement

9.2 Invitation to Apply for Eligibility and to Bid;

- 9.3 Bid Data Sheet;
- 9.4 General and Special Conditions of the Contract;
- 9.5 Supplemental Bid Bulletin
- 9.6 Eligibility requirements, documents and/or statements;
- 9.7 Performance Security and Warranty;
- 9.8 Approved Resolution to Award;
- 9.9 Notice of Award of Contract and winning bidder's "Conforme" thereto; and
- 9.10 Other contract documents that may be required by the existing laws and/or the Entity.

#### 10. RESOLUTION OF CONFLICTS

10.1 In the event of any conflict arising from the [PROJECT TITLE] between the UNIVERSITY and the CONTRACTOR, the parties shall endeavor to settle their conflicts amicably, failing which, the same shall be submitted to arbitration or to the jurisdiction of the courts of Malolos City, to the exclusion of all others.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

#### SIGNED, SEALED, AND DELIVERED BY:

**BULACAN STATE UNIVERSITY**

***[NAME OF THE CONTRACTOR]***

\_\_\_\_\_  
**MARIANO C. DE JESUS, Ed.D.**

*President*

\_\_\_\_\_  
*Owner & General Manager*

#### SIGNED IN THE PRESENCE OF:

\_\_\_\_\_  
**DANILO S. HILARIO, Ed.D.**

*VP-PRE*

\_\_\_\_\_  
*Contractor's Witness*

#### Funds Available:

**FELICITAS G. MIRABUENOS**

*Accountant IV, BuISU Accounting Office*



## ACKNOWLEDGMENT

REPUBLIC OF THE PHILIPPINES

\_\_\_\_\_ )S.S.

\_\_\_\_\_ )

BEFORE ME, a Notary Public for and in the Province/City of \_\_\_\_\_ this \_\_\_\_\_, 2015, personally came and appeared:

Name	Gov't issued identification	Issued At/Date
DR. MARIANO C. DE JESUS		

Known to me and known to be the same persons who executed the foregoing instrument and acknowledged to me that same is the free and voluntary act and deed of the entities which they respectively represent.

The foregoing instrument is an AGREEMENT consisting of four (4) pages (exclusive of attachments), including this page on which this acknowledgment is written and signed by the parties hereto and their instrument witnesses on the left hand margin of each and every page hereof.

WITNESS MY HAND AND SEAL on the date and place first above written.

Doc. No. \_\_\_\_\_

Page No. \_\_\_\_\_

Book No. \_\_\_\_\_  
Series of 2015

## Omnibus Sworn Statement

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REPUBLIC OF THE PHILIPPINES)  
CITY/MUNICIPALITY OF \_\_\_\_\_) S.S.

### AFFIDAVIT

I, *[Name of Affiant]*, of legal age, *[Civil Status]*, *[Nationality]*, and residing at *[Address of Affiant]*, after having been duly sworn in accordance with law, do hereby depose and state that:

1. **Select one, delete the other:**

*If a sole proprietorship:* I am the sole proprietor of *[Name of Bidder]* with office address at *[address of Bidder]*;

*If a partnership, corporation, cooperative, or joint venture:* I am the duly authorized and designated representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

2. **Select one, delete the other:**

*If a sole proprietorship:* As the owner and sole proprietor of *[Name of Bidder]*, I have full power and authority to do, execute and perform any and all acts necessary to represent it in the bidding for *[Name of the Project]* of the *[Name of the Procuring Entity]*;

*If a partnership, corporation, cooperative, or joint venture:* I am granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the *[Name of Bidder]* in the bidding as shown in the attached *[state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate issued by the corporation or the members of the joint venture)]*;

3. *[Name of Bidder]* is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. *[Name of Bidder]* is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. **Select one, delete the rest:**

*If a sole proprietorship:* I am not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the

BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*If a partnership or cooperative:* None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

*If a corporation or joint venture:* None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:
  - a) Carefully examine all of the Bidding Documents;
  - b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;
  - c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly, any commission, amount, fee or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

**IN WITNESS WHEREOF**, I have hereunto set my hand this \_\_\_ day of \_\_\_, 20\_\_\_ at \_\_\_\_\_, Philippines.

---

Bidder's Representative/Authorized Signatory

*[JURAT]*

\* This form will not apply for WB funded projects.