

# **PHILIPPINE BIDDING DOCUMENTS**

(As Harmonized with Development Partners)

## **RENOVATION OF THE EVSU-SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E- LEARNING CENTERS**

(Project Identification No. IB-2024-07-15)



**EASTERN VISAYAS STATE UNIVERSITY**

**Sixth Edition**

**July 2020**

# Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the “Works”) through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

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

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv) the obligations, duties, and/or functions of the winning Bidder.

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

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

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.
- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

# TABLE OF CONTENTS

<b>GLOSSARY OF TERMS, ABBREVIATIONS, AND ACRONYMS .....</b>	<b>4</b>
<b>SECTION I. INVITATION TO BID .....</b>	<b>6</b>
<b>SECTION II. INSTRUCTIONS TO BIDDERS .....</b>	<b>10</b>
1. Scope of Bid.....	11
2. Funding Information .....	11
3. Bidding Requirements.....	11
4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices .....	11
5. Eligible Bidders.....	12
6. Origin of Associated Goods .....	12
7. Subcontracts .....	12
8. Pre-Bid Conference.....	12
9. Clarification and Amendment of Bidding Documents.....	12
10. Documents Comprising the Bid: Eligibility and Technical Components .....	13
11. Documents Comprising the Bid: Financial Component .....	13
12. Alternative Bids .....	13
13. Bid Prices .....	14
14. Bid and Payment Currencies.....	14
15. Bid Security.....	14
16. Sealing and Marking of Bids.....	14
17. Deadline for Submission of Bids .....	14
18. Opening and Preliminary Examination of Bids .....	14
19. Detailed Evaluation and Comparison of Bids.....	15
20. Post Qualification.....	15
21. Signing of the Contract .....	15
<b>SECTION III. BID DATA SHEET .....</b>	<b>16</b>
<b>SECTION IV. GENERAL CONDITIONS OF CONTRACT .....</b>	<b>21</b>
1. Scope of Contract.....	22
2. Sectional Completion of Works .....	22
3. Possession of Site .....	22
4. The Contractor's Obligations.....	22
5. Performance Security .....	23
6. Site Investigation Reports .....	23
7. Warranty.....	23
8. Liability of the Contractor.....	23

9.	Termination for Other Causes.....	23
10.	Dayworks .....	23
11.	Program of Work.....	24
12.	Instructions, Inspections and Audits .....	24
13.	Advance Payment.....	24
14.	Progress Payments .....	24
15.	Operating and Maintenance Manuals.....	24
<b>SECTION V. SPECIAL CONDITIONS OF CONTRACT .....</b>		<b>25</b>
<b>SECTION VI. SPECIFICATIONS .....</b>		<b>29</b>
<b>SECTION VII. DRAWINGS .....</b>		<b>83</b>
<b>SECTION VIII. BILL OF QUANTITIES .....</b>		<b>84</b>
<b>SECTION IX. CHECKLIST OF TECHNICAL AND FINANCIAL DOCUMENTS.....</b>		<b>87</b>
<b>SECTION X. BIDDING FORMS.....</b>		<b>90</b>
	ANNEX A Statement of Bidder’s Ongoing Government & Private Contracts .....	91
	ANNEX B Statement of Bidder’s Single Largest Completed Contract.....	92
	ANNEX C Bid Securing Declaration Form .....	93
	ANNEX D Omnibus Sworn Statement .....	94
	ANNEX E Format of Joint Venture Agreement (JVA).....	96
	ANNEX F Bid Form for the Procurement of Infrastructure.....	98

# *Glossary of Terms, Abbreviations, and Acronyms*

**ABC** – Approved Budget for the Contract.

**ARCC** – Allowable Range of Contract Cost.

**BAC** – Bids and Awards Committee.

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

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

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

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

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

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

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

**CPI** – Consumer Price Index.

**DOLE** – Department of Labor and Employment.

**DTI** – Department of Trade and Industry.

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

**GFI** – Government Financial Institution.

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

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

**GOP** – Government of the Philippines.

**Infrastructure Projects** – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PhilGEPS** - Philippine Government Electronic Procurement System.

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

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**UN** – United Nations.

## *Section I. Invitation to Bid*



Republic of the Philippines  
**EASTERN VISAYAS STATE UNIVERSITY**  
Tacloban City

Project Identification Number:  
IB-2024-07-15

## BIDS AND AWARDS COMMITTEE

# INVITATION TO BID

## ***RENO VATION OF THE EVSU-SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E- LEARNING CENTERS***

1. The *Eastern Visayas State University*, through the ***INTERNALLY GENERATED FUND (IGF) FY 2024*** intends to apply the sum of ***Eight Million Seven Hundred Eighteen Thousand Eight Hundred Eighty-Seven Pesos and 71/100 (Php8,718,887.71)*** being the Approved Budget for the Contract (ABC) to payments under the contract for ***IB-2024-07-15 Renovation of the EVSU-SLS Audio Visual Hall, Old Library Function Room, Engineering Building Room 301, 302, 303, and 304 as EVSU Smart Campus E-Learning Centers***. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The *Eastern Visayas State University* now invites bids for the above Procurement Project. Completion of the Works is required ***within One Hundred Sixty (160) calendar days (CD) upon receipt of Notice to Proceed (NTP)***. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from *Eastern Visayas State University* and inspect the Bidding Documents at the address given below from ***during office hours from 9:00 A.M. to 5:00 P.M, Monday to Friday***.
5. A complete set of Bidding Documents may be acquired by interested bidders on ***July 13, 2024 – August 6, 2024 (except on Saturdays, Sundays & Holidays)*** from given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of ***Ten Thousand Pesos (Php10,000.00)***. The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person or through e-mail at [evsu.bacsecretariat@evsu.edu.ph](mailto:evsu.bacsecretariat@evsu.edu.ph).

Prospective bidders who intend to purchase the bidding documents may opt for the following mode of payment:

a. **Payment in person at the EVSU Cashiering (transaction hours: 8:00AM-3:30PM):**

- i. Step 1: Proceed to the Office of the BAC Secretariat for the issuance of payment slip.
- ii. Step 2: Present payment slip to the Cashiering Office for payment of the bid docs fee.
- iii. Step 3: Present proof of payment/official receipt to the Office of the BAC Secretariat.
- iv. Step 4: BAC Secretariat release copy of the PBD, its Bid Bulletin/s, and other attachments.

b. **Payment thru bank:**

- i. Account name: **EVSU TACLOBAN CAMPUS**
- ii. Bank: **DEVELOPMENT BANK OF THE PHILIPPINES**
- iii. Account number: **000-00090-775-3**

Note: Bidder must send its proof of payment for the fees to [evsu.bacsecretariat@evsu.edu.ph](mailto:evsu.bacsecretariat@evsu.edu.ph).

Bidding Documents may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) ([www.philgeps.gov.ph](http://www.philgeps.gov.ph)) and the Eastern Visayas State University website (<https://www.evsu.edu.ph/philgeps-posting-2024-public-bidding/>) provided that Bidders shall pay the nonrefundable fee for the bidding documents not later than the submission of their bids.

6. The *Eastern Visayas State University* will hold a *Pre-Bid Conference through a hybrid platform on **July 23, 2:00 P.M.** at the Office of the Vice President for Administration and Finance Conference Room, Tacloban City, Leyte & through video conferencing via Google Meet*, which shall be open to prospective bidders.

Prospective bidders are encouraged to discuss any concerns or clarifications about the eligibility requirements including the technical specifications in the said conference.

7. Bids must be duly received by the BAC Secretariat through (i) manual submission at the office address as indicated below or (ii) online or electronic submission, on or before the time and date indicated below:
- a. The bidder has the option to submit a bid electronically or manually on or before **August 6, 2024, 1:30 P.M.** If a bidder chooses to submit an electronic bid, the same bidder shall submit a bid manually for the same project on or before **August 8, 2024, 2:00 P.M.**, for evaluation purposes during post-Qualification. Further instructions on the submission and receipt of electronic bids are provided in BDS (ITB Clause 15); and,
  - b. If a bidder chooses to submit manually, the manual bid shall be sufficient for evaluation purposes during the Opening of Bids, and electronic submission shall no longer be required. The same shall be submitted at the address indicated below on or before **August 6, 2024, 1:30 P.M. (BAC Secretariat time)**.

Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. Bid opening shall be through a hybrid platform at the *Office of Vice President for Administration and Finance Conference Room, Tacloban City, Leyte & through video conferencing via Google Meet* on August 6, 2024, 2:00 P.M. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The *Eastern Visayas State University* reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
11. You may visit the following websites:

For downloading of Bidding Documents:

**PhilGEPS Website:** [www.philgeps.gov.ph](http://www.philgeps.gov.ph)

**EVSU Website:** <https://www.evsu.edu.ph/philgeps-posting-2024-public-bidding/>

For online bid submission:

Send to [evsu.bacsecretariat@evsu.edu.ph](mailto:evsu.bacsecretariat@evsu.edu.ph)

12. For further information, please refer to:

**THE SECRETARIAT**

Bids and Awards Committee

Eastern Visayas State University

Arch. Lino R. Gonzaga Avenue,

Tacloban City, Philippines 6500

Telephone No. 0953-355-7046 Tm

Email: [evsu.bacsecretariat@evsu.edu.ph](mailto:evsu.bacsecretariat@evsu.edu.ph)

**(SGD) BENEDICTO T. MILITANTE, JR., Ph.D., J.D.**

*Vice President for Administration & Finance*

*Chairperson, Bids and Awards Committee*

## *Section II. Instructions to Bidders*

## 1. Scope of Bid

The Procuring Entity, **EASTERN VISAYAS STATE UNIVERSITY** invites Bids for the **RENOVATION OF THE EVSU-SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E-LEARNING CENTERS**, with Project Identification Number **IB-2024-07-15**.

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

## 2. Funding Information

2.1. The GOP through the source of funding as indicated below for 2024 in the amount of **Eight Million Seven Hundred Eighteen Thousand Eight Hundred Eighty-Seven Pesos and 71/100 (Php8,718,887.71)**.

2.1. The source of funding is **INTERNALLY GENERATED FUND (IGF) FY 2024**.

## 3. Bidding Requirements

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

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

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

## 4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex “I” of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

## 5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.
- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

## 6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

## 7. Subcontracts

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

The Procuring Entity has prescribed that **subcontracting is not allowed**.

## 8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address *Office of Vice President for Administration and Finance Conference Room, Tacloban City* and/or *through video conferencing via Google Meet* as indicated in paragraph 6 of the **IB**.

## 9. Clarification and Amendment of Bidding Documents

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

## 10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid special PCAB License in case of Joint Ventures, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

## 11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

## 12. Alternative Bids

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

### 13. Bid Prices

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

### 14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. Payment of the contract price shall be made in **Philippine Pesos**.

### 15. Bid Security

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

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

### 16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

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

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

### 17. Deadline for Submission of Bids

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

### 18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case

videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

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

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

## 19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 15 shall be submitted for each contract (lot) separately.
- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

## 20. Post Qualification

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

## 21. Signing of the Contract

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

## *Section III. Bid Data Sheet*

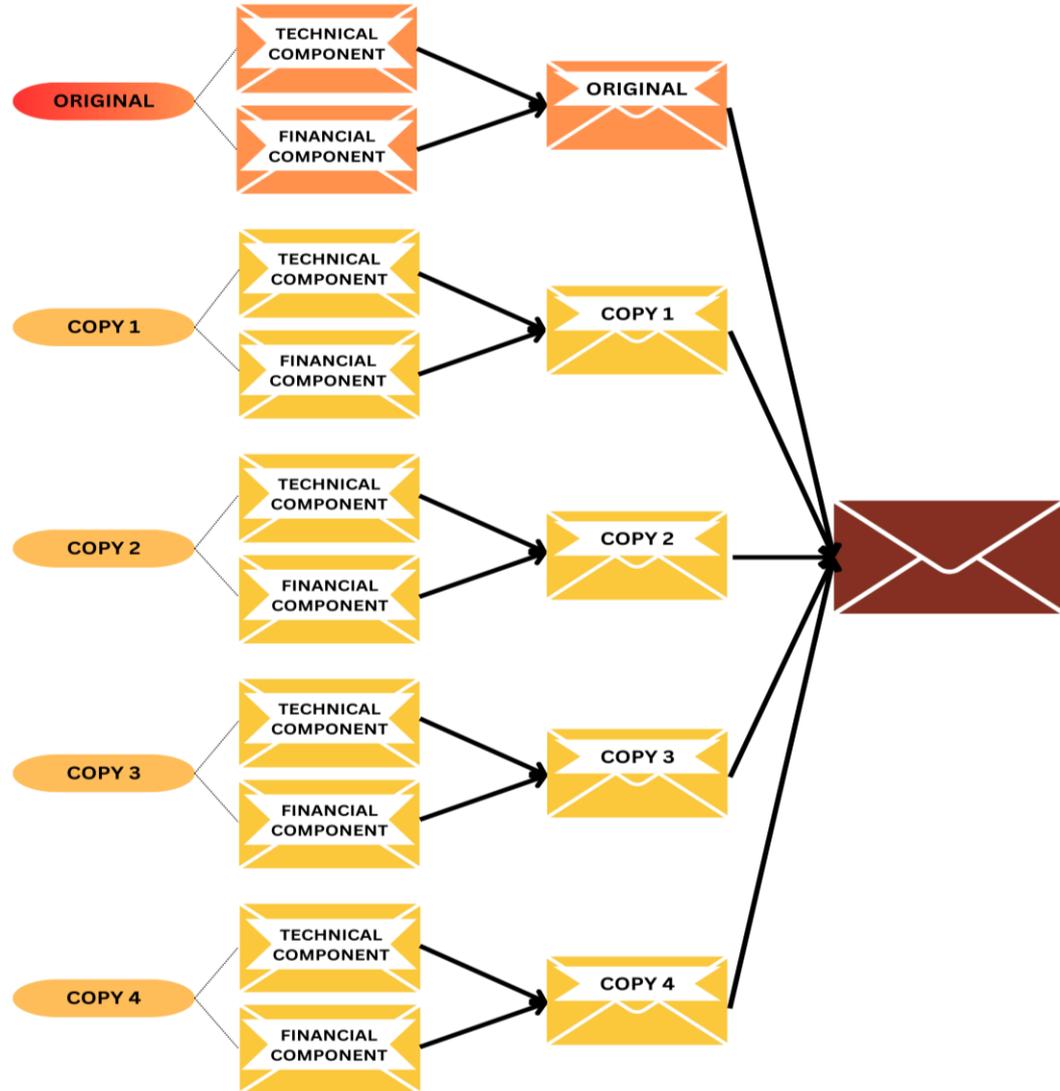
# Bid Data Sheet

ITB Clause																			
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: <p style="text-align: center;"><i><b>Renovation of Building including Audio-Visual Halls, Function Rooms, and E-Learning Classrooms/Centers</b></i></p>																		
7.1	Subcontracting is <b>NOT</b> allowed.																		
9.1	Prospective bidders may submit their written request for clarification on and/or interpretation of any part of the Bidding Documents, either to EVSU BAC Secretariat Office or through electronic mail at <a href="mailto:evsu.bacsecretariat@evsu.edu.ph">evsu.bacsecretariat@evsu.edu.ph</a> not later than <b>July 24, 2024 , 5:00PM</b> . Clarifications made and submitted beyond the abovementioned date shall not be accepted and/or entertained further.																		
10.3	The prospective Contractor/Developer must possess a <b>valid PCAB License of at least Category B</b> and be <b>registered with classification General Building GB1-(Building or Industrial Plant)</b> .																		
10.4	The following are the key personnel required for the project: <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; width: 60%;"> <thead> <tr> <th style="text-align: center;">TECHNICAL PERSONNEL REQUIRED</th> <th style="text-align: center;">NUMBER</th> </tr> </thead> <tbody> <tr> <td>Civil Engineer</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Construction Foreman</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Part Time Safety Officer</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>	TECHNICAL PERSONNEL REQUIRED	NUMBER	Civil Engineer	1	Construction Foreman	1	Part Time Safety Officer	1										
TECHNICAL PERSONNEL REQUIRED	NUMBER																		
Civil Engineer	1																		
Construction Foreman	1																		
Part Time Safety Officer	1																		
10.5	The minimum major equipment requirements are the following: <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; width: 60%;"> <thead> <tr> <th style="text-align: center;">EQUIPMENT</th> <th style="text-align: center;">NUMBER OF UNITS</th> </tr> </thead> <tbody> <tr> <td>Welding Machine 300Amp</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Bar Cutter</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Bar Bender</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Concrete Vibrator</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Pump Crete</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Dump Truck (12 yd<sup>3</sup>)</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Plate Compactor</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Jackhammer</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>	EQUIPMENT	NUMBER OF UNITS	Welding Machine 300Amp	1	Bar Cutter	1	Bar Bender	1	Concrete Vibrator	1	Pump Crete	1	Dump Truck (12 yd <sup>3</sup> )	1	Plate Compactor	1	Jackhammer	1
EQUIPMENT	NUMBER OF UNITS																		
Welding Machine 300Amp	1																		
Bar Cutter	1																		
Bar Bender	1																		
Concrete Vibrator	1																		
Pump Crete	1																		
Dump Truck (12 yd <sup>3</sup> )	1																		
Plate Compactor	1																		
Jackhammer	1																		

15.1	<p>The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:</p> <table border="1" data-bbox="323 315 1385 770"> <thead> <tr> <th data-bbox="323 315 1046 416">FORMS OF BID SECURITY</th> <th data-bbox="1046 315 1385 416">AMOUNT OF BID SECURITY (EQUAL TO PERCENTAGE OF THE ABC)</th> </tr> </thead> <tbody> <tr> <td data-bbox="323 416 1046 465">• Bid Securing Declaration; <b>OR</b></td> <td data-bbox="1046 416 1385 465"><b>NOTARIZED</b></td> </tr> <tr> <td data-bbox="323 465 1046 580">• Cash, Cashier's/ manager's check issued by a Universal or Commercial Bank equivalent to Two Percent (2%); <b>OR</b></td> <td data-bbox="1046 465 1385 580"><b>174,377.75</b></td> </tr> <tr> <td data-bbox="323 580 1046 770">• Surety Bond equivalent to Five Percent (5%) (If security bond, attach the original copy of the official receipt of premium payment and certification issued by the Insurance Commission)</td> <td data-bbox="1046 580 1385 770"><b>435,944.39</b></td> </tr> </tbody> </table>	FORMS OF BID SECURITY	AMOUNT OF BID SECURITY (EQUAL TO PERCENTAGE OF THE ABC)	• Bid Securing Declaration; <b>OR</b>	<b>NOTARIZED</b>	• Cash, Cashier's/ manager's check issued by a Universal or Commercial Bank equivalent to Two Percent (2%); <b>OR</b>	<b>174,377.75</b>	• Surety Bond equivalent to Five Percent (5%) (If security bond, attach the original copy of the official receipt of premium payment and certification issued by the Insurance Commission)	<b>435,944.39</b>
FORMS OF BID SECURITY	AMOUNT OF BID SECURITY (EQUAL TO PERCENTAGE OF THE ABC)								
• Bid Securing Declaration; <b>OR</b>	<b>NOTARIZED</b>								
• Cash, Cashier's/ manager's check issued by a Universal or Commercial Bank equivalent to Two Percent (2%); <b>OR</b>	<b>174,377.75</b>								
• Surety Bond equivalent to Five Percent (5%) (If security bond, attach the original copy of the official receipt of premium payment and certification issued by the Insurance Commission)	<b>435,944.39</b>								
16.1	<p>Each Bidder shall submit one (1) original and four (4) readable authenticated copies of the first and second components of its (SEALED) bid. Documents to be submitted shall be properly tabbed and labeled according to the title of the document attached for prompt identification: e.g., PhilGEPS Certificate of Registration (Platinum) – PhilGEPS</p> <p>All envelopes shall:</p> <ul style="list-style-type: none"> <li>• be addressed to the Procuring Entity's BAC;</li> <li>• bear the name and address of the Bidder in capital letters;</li> <li>• contain the name of the contract to be bid in capital letters;</li> <li>• bear the specific identification of this bidding process indicated in the ITB Clause 1; and bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of bids, as specified in the IB.</li> </ul> <table border="1" data-bbox="336 1480 1369 1917"> <tr> <td data-bbox="336 1480 558 1529">TO</td> <td data-bbox="558 1480 1369 1529">: <b>THE BIDS AND AWARDS COMMITTEE EASTERN VISAYAS STATE UNIVERSITY</b></td> </tr> <tr> <td data-bbox="336 1529 558 1579">FROM</td> <td data-bbox="558 1529 1369 1579">: _____ (Name of Bidder in Capital Letters)</td> </tr> <tr> <td data-bbox="336 1579 558 1628">ADDRESS</td> <td data-bbox="558 1579 1369 1628">: _____ (Address of Bidder in Capital Letters)</td> </tr> <tr> <td data-bbox="336 1628 558 1677">BID REF. NO.</td> <td data-bbox="558 1628 1369 1677">: _____</td> </tr> </table> <p style="text-align: center;">(In Capital Letters, Indicate the Pharse):  <b>"DO NOT OPEN BEFORE: _____"</b></p>	TO	: <b>THE BIDS AND AWARDS COMMITTEE EASTERN VISAYAS STATE UNIVERSITY</b>	FROM	: _____ (Name of Bidder in Capital Letters)	ADDRESS	: _____ (Address of Bidder in Capital Letters)	BID REF. NO.	: _____
TO	: <b>THE BIDS AND AWARDS COMMITTEE EASTERN VISAYAS STATE UNIVERSITY</b>								
FROM	: _____ (Name of Bidder in Capital Letters)								
ADDRESS	: _____ (Address of Bidder in Capital Letters)								
BID REF. NO.	: _____								

For details in the preparation of sealed bids, please refer to the diagram below:

*Figure 1. Sealing of Bids (Illustration of bids with 1 original and 4 copies, each box in the diagram represents a sealed envelope)*



16.2 Guidelines for Electronic Submission of Bids:

- a) The Bidder must submit a soft copy of their bids through e-mail to [evsu.bacsecretariat@evsu.edu.ph](mailto:evsu.bacsecretariat@evsu.edu.ph) at any time before **August 6, 2024, 1:30 P.M.**
- b) In the online submission of bids, a two-folder system will be utilized. The first folder contains the requirements of the Technical Component checklist as presented under Section VIII and shall be labeled “**TECHNICAL COMPONENT**”. The second folder contains the requirements of the Financial Component checklist and is marked “**FINANCIAL COMPONENT**”.
- c) The documentary requirements shall be segregated and labelled according to the type of document for prompt identification (e.g., PhilGEPS

	<p>Certificate of Registration (Platinum) labelled as PhilGEPS) and each shall be in Portable Document Format (PDF).</p> <p>d) Each folder shall be compressed in Zip, RAR or 7z format with password protection. Submitted bidding documents that are not in compressed archive format and are not password protected, will be automatically rejected.</p> <p>e) The password for accessing the file shall be disclosed by the Bidders during the bid opening which may be done in person or face-to-face through videoconferencing, webcasting, e-mail or similar technology.</p> <p>f) An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.</p> <p>g) For further information, please refer to:</p> <p><b>VINCENT B. CABANTOC</b>  <i>Head, BAC Secretariat</i>  <i>CP No. 0953-355-7046 - TM</i>  <i>Email Add: <a href="mailto:evsu.bacsecretariat@evsu.edu.ph">evsu.bacsecretariat@evsu.edu.ph</a></i></p>										
19.2	<p>Partial bid is not allowed. The goods are grouped in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.</p> <div style="background-color: #92d050; padding: 5px; text-align: center;"> <p><b>IB-2024-07-15 RENOVATION OF THE EVSU-SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E-LEARNING CENTERS</b></p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">ITEM NO.</th> <th style="width: 35%;">P.R. NO.</th> <th style="width: 10%;">QTY</th> <th style="width: 10%;">UNIT</th> <th style="width: 25%;">TOTAL AMOUNT</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>1</b></td> <td style="text-align: center;"><b>05-0438-24 IPDO</b></td> <td style="text-align: center;"><b>1</b></td> <td style="text-align: center;"><b>LOT</b></td> <td style="text-align: right;"><b>Php8,718,887.71</b></td> </tr> </tbody> </table>	ITEM NO.	P.R. NO.	QTY	UNIT	TOTAL AMOUNT	<b>1</b>	<b>05-0438-24 IPDO</b>	<b>1</b>	<b>LOT</b>	<b>Php8,718,887.71</b>
ITEM NO.	P.R. NO.	QTY	UNIT	TOTAL AMOUNT							
<b>1</b>	<b>05-0438-24 IPDO</b>	<b>1</b>	<b>LOT</b>	<b>Php8,718,887.71</b>							
21	<p>Additional contract documents relevant to the Project that are required by existing laws and/or the Procuring Entity, such as:</p> <ul style="list-style-type: none"> <li>• Construction Schedule and S-curve</li> <li>• Manpower Schedule</li> <li>• Construction Methods</li> <li>• Equipment Utilization Schedule</li> <li>• Construction Safety and Health Program approved by the DOLE</li> <li>• Contractor’s All-Risk Insurance (CARI)</li> <li>• and other acceptable tools of project scheduling.</li> </ul> <p><i>Note: The successful Bidder shall furnish these documents <b>within ten (10) calendar days</b> from receipt of the approved Notice of Award (NOA) from the Procuring Entity but in no case later than the signing of the contract by both parties.</i></p>										

## *Section IV. General Conditions of Contract*

## 1. Scope of Contract

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

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

## 2. Sectional Completion of Works

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

## 3. Possession of Site

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

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

## 4. The Contractor's Obligations

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

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

## 5. Performance Security

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

## 6. Site Investigation Reports

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

## 7. Warranty

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

## 8. Liability of the Contractor

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

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

## 9. Termination for Other Causes

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

## 10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the SCC, the Dayworks rates in the

Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

## **11. Program of Work**

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

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

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

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

## **13. Advance Payment**

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

## **14. Progress Payments**

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

## **15. Operating and Maintenance Manuals**

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC**.

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

## *Section V. Special Conditions of Contract*

# Special Conditions of Contract

GCC Clause									
2	The Intended Completion Date is <b>One Hundred Sixty (160) calendar days</b> from receipt of approved Notice to Proceed.								
4.1	The turnover of the site shall be simultaneous to the receipt by the Contractor of the Notice to Proceed.								
6	Conduct site investigation at EVSU-Main Campus and secure Certification of Site Inspection issued by the Institutional Planning and Development Office (IPDO).								
7.2	<p><i>[In case of permanent structures, such as buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures:] <b>Fifteen (15) years.</b></i></p> <p>All projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Section 1723 of the New Civil Code of the Philippines.</p> <p>To guarantee that the contractor shall perform his responsibilities as prescribed in Section 62.2.3.1(a) of the 2016 RIRR of RA 9184, it shall be required to post a warranty security in accordance with the following schedule:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 60%;">FORM OF WARRANTY SECURITY</th> <th style="width: 40%;">AMOUNT OF WARRANTY SECURITY (NOT LESS THAN THE REQUIRED PERCENTAGE OF THE TOTAL CONTRACT PRICE)</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> <li>• Cash or Letter of Credit issued by a 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.</li> </ul> </td> <td style="text-align: center;"><b>Five percent (5%)</b></td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>• Bank guarantee confirmed by a Universal or Commercial Bank.</li> </ul> </td> <td style="text-align: center;"><b>Ten percent (10%)</b></td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>• Surety bond callable upon demand issued by GSIS or a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.</li> </ul> </td> <td style="text-align: center;"><b>Thirty percent (30%)</b></td> </tr> </tbody> </table> <p>The warranty security shall be denominated in Philippine Pesos, remain effective for one (1) year from the date of issuance of the Certificate of</p>	FORM OF WARRANTY SECURITY	AMOUNT OF WARRANTY SECURITY (NOT LESS THAN THE REQUIRED PERCENTAGE OF THE TOTAL CONTRACT PRICE)	<ul style="list-style-type: none"> <li>• Cash or Letter of Credit issued by a 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.</li> </ul>	<b>Five percent (5%)</b>	<ul style="list-style-type: none"> <li>• Bank guarantee confirmed by a Universal or Commercial Bank.</li> </ul>	<b>Ten percent (10%)</b>	<ul style="list-style-type: none"> <li>• Surety bond callable upon demand issued by GSIS or a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.</li> </ul>	<b>Thirty percent (30%)</b>
FORM OF WARRANTY SECURITY	AMOUNT OF WARRANTY SECURITY (NOT LESS THAN THE REQUIRED PERCENTAGE OF THE TOTAL CONTRACT PRICE)								
<ul style="list-style-type: none"> <li>• Cash or Letter of Credit issued by a 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.</li> </ul>	<b>Five percent (5%)</b>								
<ul style="list-style-type: none"> <li>• Bank guarantee confirmed by a Universal or Commercial Bank.</li> </ul>	<b>Ten percent (10%)</b>								
<ul style="list-style-type: none"> <li>• Surety bond callable upon demand issued by GSIS or a surety or insurance company duly certified by the Insurance Commission as authorized to issue such security.</li> </ul>	<b>Thirty percent (30%)</b>								

	Final Acceptance by the Procuring Entity, and returned only after the lapse of the said one (1) year period.
10	No dayworks are applicable to the contract.
11.1	<p>The Contractor shall submit the <b>Program of Work</b> to the Procuring Entity’s Representative within <i>Seven (7) calendar days</i> of delivery of the approved Notice of Award (NOA) that shall include, among others:</p> <ul style="list-style-type: none"> <li>a) The order in which it intends to carry out the work including anticipated timing for each stage of design/ detailed engineering and construction,</li> <li>b) Sequence of timing for inspections and tests as specified in the contract documents,</li> <li>c) General description of the design and construction methods to be adopted,</li> <li>d) Number and names of personnel to be assigned for each stage of the work,</li> <li>e) List of equipment required on site for each major stage of the work, and,</li> <li>f) Description of the quality control system to be utilized for the project.</li> </ul>
11.2	The amount to be withheld for late submission of an updated Program of Work is <b>ten percent (10%) of the Monthly Progress Billing</b> .
13	<p>An advance payment <b>not to exceed fifteen percent (15%) of the Contract Price</b> in Philippine Peso shall be made upon the submission of a written request per stage of work by the Contractor to cover the cost of Mobilization. The advance payment shall be deducted by the EVSU in equal installments against the statements for the progress billings of the Services until the Advance Payment has been fully deducted.</p> <p>Advance Payment shall be made only upon the submission to and acceptance by EVSU of an Irrevocable Standby Letter of Credit or equivalent value from a commercial bank, a bank guarantee or a surety bond callable on demand. issued by a duly licensed surety or insurance company and confirmed by EVSU.</p>
14	The materials and equipment delivered on the site but not completely put in place shall be <b>excluded</b> from payment.
15.1	<p>The contractor shall cause the preparation and submission of “as-built” plans duly signed and sealed by a professional architect/ civil/ electrical/ mechanical/ auxiliary/ sanitary engineer in the same sheet size and scale as the original drawings within one (1) month after the completion of the project.</p> <p>All As-Built Plans and Documents shall be delivered in sets as follows:</p> <ul style="list-style-type: none"> <li>1. One (1) set Original Copies, with the working drawings in the smallest scale of 1:100 meters prepared in CAD format, printed/plotted in Mylar paper original copies;</li> <li>2. Five (5) sets of Blueprint copies for each plan</li> <li>3. Two (2) sets of soft copies of AutoCAD plans/drawings and PDF</li> </ul>

	<p>format of Cost Estimates, Specifications, PERT-CPM, Schedule of Timeline, and other related documents in CD-ROM/Flash Drive Storage device;</p> <p>Other documents processed and issued in favor of EVSU during the construction period (i.e. Inspection Reports, Record Book, Building/Mechanical/ Electrical Permits, Fire Safety Reports, Clearances, Certificates and related documents)</p>
15.2	<p>The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is <b>five percent (5%) of the Final Progress Billing.</b></p>

## *Section VI. Specifications*



Republic of the Philippines  
**EASTERN VISAYAS STATE UNIVERSITY**  
Physical Plant and Infrastructure Development Office

## **OUTLINE SPECIFICATIONS**

*NAME OF PROEJECT:* **RENOVATION OF THE EVSU – SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E-LEARNING CENTERS**

*LOCATION:* **EVSU MAIN CAMPUS – TACLOBAN CITY**

### **GENERAL CONDITIONS**

All parts of the construction shall be finished with first class workmanship, to the fullest talent and meaning of the plans and these Specifications, and to the entire satisfaction of the Architect/Engineer and the University.

The construction shall conform to all the requirements of the National Building Code, as well as the local rules and regulations of Tacloban City.

### **ITEM 903 (2) FORMWORKS AND FALSEWORKS**

#### **DESCRIPTION**

This Item shall consist of designing, constructing and removing forms and falsework to temporarily support concrete, girders and other structural elements until the structure is completed to the point it can support itself.

#### **MATERIAL REQUIREMENTS**

##### **Formwork**

The materials used for smooth form finish shall be plywood, tempered concrete-form-grade hardboard, metal, plastic, paper or other acceptable materials capable of producing the desired finish for form-facing materials. Form-facing materials shall produce a smooth, uniform texture on the concrete. Form-facing materials with raised grain, torn surfaces, worn edges, patches, dents, or other defects that will impair the texture of concrete surfaces shall not be permitted. No form-facing material shall be specified for rough form finish.

##### **Formwork Accessories**

Formwork accessories that are partially or wholly embedded in concrete, including ties and hangers shall be commercially manufactured. The use of non-fabricated wire form ties shall not be permitted. Where indicated in the Contract, use form ties with integral water barrier plates in walls.

##### **Formwork Release Agents**

Commercially manufactured formwork release agents shall be used to prevent formwork absorption of moisture, prevent bond with concrete, and hot stain the concrete surfaces.

## **Falsework**

The materials to be used in the falsework construction shall be of the quantity and quality necessary to withstand the stresses imposed; it may be timber or steel or a combination of both. The workmanship shall be of such quality that the falsework will support the loads imposed on it without excessive settlement or take up beyond as shown on the falsework drawings.

## **CONSTRUCTION REQUIREMENTS**

### **Design**

Falsework and Formworks design and drawings shall be in accordance with Item 407 Concrete Structure subsection 407.3.9 and 407.3.12 respectively.

### **Formwork and Falsework Drawings**

When complete details for forms and falseworks are not shown, prepare and submit drawings to the Engineer, showing the following:

1. Details for constructing safe and adequate forms and falsework that provide the necessary rigidity, support the loads imposed, and produce in the finished structure the required lines and grades. See subsection 414.3.1.2 for design loads. See Subsection 414.3.1.3 for design stresses, loadings and deflections. See subsection 414.3.2 for manufactured assemblies.
2. The maximum applied structural load on the foundation material. Include a drainage plan or description of how foundations will be protected from saturation, erosion, and/or scour see subsection 414.3.3.1.
3. The description of all proposed material. Describe the material that is not describable by standard nomenclature (such as AASHTO or ASTM specified) based on manufacturer's test and recommended working loads. Provide evaluation data for falsework material showing that the physical properties and conditions of the material can support the loads assumed in the design.
4. The design calculations and material specifications showing that the proposed system will support the imposed concrete pressures and other loads. Provide an outline of the proposed concrete placement operation listing the equipment, labor, and procedures to be used for duration of each operation. A superstructure placing diagram showing the concrete placing sequence and construction joint locations shall be included.
5. Design calculations for proposed bridge falsework. A registered professional engineer proficient in structural design shall design, sign, and seal the drawings. The falsework design calculations shall show the stresses and deflections in load supporting members.
6. Anticipated total settlements of falsework and forms shall be shown. Include falsework footing settlement and joint take-up. Design for anticipated settlements not to exceed 20 millimeters. Design and detail on falsework supporting deck slabs and overhangs on girder bridges so there is no differential settlement between the girders and the deck forms during placement of deck concrete. Design and construct the falsework to elevations that include anticipated settlement during concrete placement and required camber to compensate for member deflections during construction.
7. Support system for form panels supporting concrete deck slabs and overhangs on girder bridges.
8. Details for strengthening and protecting falsework over or adjacent to roadways and railroads during each phase of erection and removal. See subsection 414.3.3.2.

9. Intended steel erection procedures with calculations in sufficient detail to substantiate that the girder geometry will be correct. See subsection 414.3.3.3.
10. Details of proposed anchorage and ties for void forms shall be submitted. See subsection 414.3.4 for void form requirements.
11. Separate Falsework drawings for each structure shall be submitted to the Engineer for approval, except for identical structures with identical falsework design and details.

### **ITEM 803 (1) a,b,c STRUCTURE EXCAVATION**

#### **DESCRIPTION**

This Item shall consist of the necessary excavation for foundation structures not otherwise provided for in the Specifications. the backfilling of completed structures and the disposal of all excavated surplus materials, shall be in accordance with these Specifications and in reasonably close conformity with the Plans or as established by the Engineer.

It shall also include the furnishing and placing of approved foundation fill material to replace unsuitable material encountered below the foundation elevation of structures.

No allowance will be made for classification of different types of material encountered.

#### Construction Requirements

##### Clearing and Grubbing

Prior to starting excavation operations in any area, all necessary clearing and grubbing in that area shall have been performed in accordance with Clearing and Grubbing.

#### **Excavation**

- (1) General, all structures. The Contractor shall notify the Engineer sufficiently in advance of the beginning of any excavation so that cross-sectional elevations and measurements may be taken on the undisturbed ground. The natural ground adjacent to the structure shall not be disturbed without permission of the Engineer.

Trenches or foundation pits for structures or structure footings shall be excavated to the lines and grades or elevations shown on the Plans or as staked by the Engineer. They shall be of sufficient size to permit the placing of structures or structure footings of the full width and length shown. The elevations of the bottoms of footings, as shown on the Plans, shall be considered as approximate only and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary, to secure a satisfactory foundation.

Boulders, logs, and other objectionable materials encountered in excavation shall be removed.

After each excavation is completed, the Contractor shall notify the Engineer to that effect and no footing, bedding material or pipe culvert shall be placed until the Engineer has approved the depth of excavation and the character of the foundation material.

- (2) Structures other than pipe culverts. All rock or other hard foundation materials shall be cleaned all loose materials, and cut to a firm surface, either level, stepped, or serrated as directed by the Engineer. All seams or crevices shall be cleaned and grouted. All loose and disintegrated rocks and thin strata shall be removed. When the footing is to rest on

material other than rock, excavation to final grade shall not be made until just before the footing is to be placed. When the foundation material is soft or mucky or otherwise unsuitable, as determined by the Engineer, the Contractor shall remove the unsuitable material and backfill with approved granular material. This foundation fill shall be placed and compacted in 150 mm (6 inches) layers up to the foundation elevation.

When foundation piles are used, the excavation of each pit shall be completed before the piles are driven and any placing of foundation fill shall be done after the piles are driven. After the driving is completed, all loose and displaced materials shall be removed, leaving a smooth, solid bed to receive the footing.

## **UTILIZATION OF EXCAVATED MATERIALS**

All excavated materials, so far as suitable, shall be utilized as backfill or embankment. The surplus materials shall be disposed of in such a manner as not to obstruct the stream or otherwise impair the efficiency or appearance of the structure. No excavated materials shall be deposited at any time so as to endanger the partly finished structure.

### **Preservation of Channel**

If any excavation or dredging is made at the side of the structure before caissons, cribs, or cofferdams are sunk in place, the Contractor shall, after the foundation base is in place, backfill all such excavations to the original ground surface or stream bed with material satisfactory to the Engineer.

### **Backfill and Embankment for Structures**

Excavated areas around structures shall be backfilled with free draining granular material approved by the Engineer and placed in horizontal layers not over 150 mm (6 inches) in thickness, to the level of the original ground surface. Each layer shall be moistened or dried as required and thoroughly compacted with mechanical tampers.

In placing backfills or embankment, the material shall be placed simultaneously in so far as possible to approximately the same elevation on both sides of an abutment, pier, or wall. If conditions require placing backfill or embankment appreciably higher on one side than on the opposite side, the additional material on the higher side shall not be placed until the masonry has been in place for 14 days, or until tests made by the laboratory under the supervision of the Engineer establishes that the masonry has attained sufficient strength to withstand any pressure created by the methods used and materials placed without damage or strain beyond a safe factor.

All embankments adjacent to structures shall be constructed in horizontal layers and compacted as prescribed in Subsection 104.3.3 except that mechanical tamper may be used for the required compaction. Special care shall be taken to prevent any wedging action against the structure and slopes bounding or within the areas to be filled shall be benched or serrated to prevent wedge action. The placing of embankment and the benching of slopes shall continue in such a manner that at all times there will be horizontal berm of thoroughly compacted material for a distance at least equal to the height of the abutment or wall to the backfilled against except insofar as undisturbed material obtrudes upon the area.

Broken rock or coarse sand and gravel shall be provided for a drainage filter at weep holes as shown on the Plans.

## **3 Method of Measurement**

### **3.1 Structure Excavation**

The volume of excavation to be paid for will be the number of cubic meters measured in original position of material acceptably excavated in conformity with the Plans or as directed by the

Engineer, but in no case, except as noted, will any of the following volumes be included in the measurement for payment:

- The volume outside of neat lines of under drains as shown on the Plans, and outside the limits of foundation fill as ordered by the Engineer.
- The volume included within the stacked limits of the roadway excavation, contiguous channel changes, -ditches, etc., for which payment is otherwise provided in the Specification.
- Volume of water or other liquid resulting from construction operations and which can be pumped or drained away.
- The volume of any excavation performed prior to the taking of elevations and measurements of the undisturbed ground.
- The volume of any material except that where the Plans indicate or the Engineer directs the excavation after embankment has been placed and except that when installation of pipe culverts by the imperfect trench method specified in Item 500 is required, the volume of material re-excavated as directed will be included.
- The volume of excavation for footings ordered at a depth more than 1.5 m (60 inches) below the lowest elevation for such footings shown on the original Contract Plans, unless the Bill of Quantities contains a pay item for excavation ordered below the elevations shown on the Plans for individual footings.

#### **ITEM NO. 900 (1)c1 – STRUCTURAL CONCRETE (Ready Mix Concrete, Class A, 28 Days)**

##### **SCOPE**

This Item shall consist of furnishing, bending, placing and finishing concrete in all structures except pavements in accordance with this Specification and conforming to the lines, grades, and dimensions shown on the Plans. Concrete shall consist of a mixture of Portland Cement, fine aggregate, coarse aggregate, admixture when specified, and water mixed in the proportions specified or approved by the Architect/Engineer.

##### **CLASSES AND USES OF CONCRETE**

Five classes of concrete are provided for in this Item, namely: A, B, C, P and Seal. Each class shall be used in that part of the structure as called for on the Plans. The classes of concrete will generally be used as follows:

- Class A – All superstructures and heavily reinforced substructures. The important parts of the structure included are slabs, beams, girders, columns, arch ribs, box culverts, reinforced abutments, retaining walls, and reinforced footings.
- Class B – Footings, pedestals, massive pier shafts, pipe bedding, and gravity walls, unreinforced or with only a small amount of reinforcement.
- Class C – Thin reinforced sections, railings, precast R.C. piles and cribbing and for filler in steel grid floors.
- Class P – Pre-Stressed concrete structures and members.
- Seal – Concrete deposited in water.

##### **Material Requirements**

##### **Portland Cement (APO Portland Cement or Approved equal)**

It shall conform to all the requirements of Subsection 311.2.1.

Fine Aggregate

It shall conform to all the requirements of Subsection 311.2.2.

Coarse Aggregate

It shall conform to all the requirements of Subsection 311.2.3 except that gradation shall conform to Table 900.1.

Table 900.1 – Grading Requirements for Coarse Aggregate

Sieve Designation		Mass Percent Passing				
Standard Mm	Alternate US Standard	Class A	Class B	Class C	Class P	Class Seal
63	2-1/2"		100			
50	2"	100	95-100			
37.5	1-1/2"	95-100	-			100
25	1"	-	35-70		100	95-100
19.0	3/4"	35-70	-	100	95-100	-
12.5	1/2"	-	10-30	90-100	-	25-60
9.5	3/8"	10-30	-	40-70	20-55	-
4.75	No.4	0-5	0-5	0-15*	0-10*	0-10*

\* The measured cement content shall be within plus (+) or minus (-) 2 mass percent of the design cement content.

Water

It shall conform to the requirements of Subsection 311.2.4

Admixtures

Admixtures shall conform to the requirements of Subsection 311.2.7

Curing Materials

Curing materials shall conform to the requirements of Subsection 311.2.8.

Expansion Joint Materials

Expansion joint materials shall be:

1. Preformed Sponge Rubber and Cork, conforming to AASHTO M 153.
2. Hot-Poured Elastic Type, conforming to AASHTO M 173.
3. Pre-formed Fillers, conforming to AASHTO M 213.]

Elastomeric Compression Joint Seals

These shall conform to AASHTO M 220.

Elastomeric Bearing Pads

These shall conform to AASHTO M 251 or Item 412 – Elastomeric Bearing Pads.

Storage of Cement and Aggregates

Storage of cement and aggregates shall conform to all the requirements of Subsection 311.2.10.

Sampling and Testing of Structural Concrete

As work progresses, at least one (1) sample consisting of three (3) concrete cylinder test specimens, 150 x 300mm (6 x 12 inches), shall be taken from each seventy-five (75) cubic meters of each class of concrete or fraction thereof placed each day.

Compliance with the requirements of this Section shall be determined in accordance with the following standard methods of AASHTO:

Sampling of fresh concrete

T 141

Weight per cubic metre and air content (gravi- Metric) of concrete

- T 121  
Sieve analysis of fine and coarse aggregates
- T 27  
Slump of Portland Cement Concrete
- T 119  
Specific gravity and absorption of fine aggregate
- T 84  
Tests for strength shall be made in accordance with the following:  
Making and curing concrete compressive and flexural tests specimens in the field
- T 23  
Compressive strength of molded concrete  
Cylinders
- T 22

**Production Requirements**

Proportioning and Strength of Structural Concrete.

The concrete materials shall be proportioned in accordance with the requirements for each class of concrete as specified in Table 900.2, using the absolute volume method as outlined in the American Concrete Institute (ACI) Standard 211.1. “Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete”. Other methods of proportioning may be employed in the mix design with prior approval of the Architect/Engineer. The mix shall either be designed or approved by the Architect/Engineer. A change in the source of materials during the progress of work may necessitate a new mix design.

The strength requirements for each class of concrete shall be as specified in Table 900.2.

Table 900.2 - Composition and Strength of Concrete for Use in Structures

Class Of Concrete	Minimum Cement Content Per m <sup>3</sup>  Kg (bag <sup>**</sup> )	Maximum Water/ Cement Ratio  kg/kg	Consistency Range in Slump  mm (inch)	Designated Size of Coarse Aggregate  Square Opening Std.mm	Minimum Compressive Strength of 150x300mm Concrete Cylinder Specimen at 28 days, MN/m <sup>2</sup> (psi)
A	360 (9bags)	0.53	50 – 100 (2 – 4)	37.5 -4.75 (1-1/2” – No.4)	20.7 (3000)
B	320 (8 bags)	0.58	50 – 100 (2 – 4)	50 – 4.75 (2” – No.4)	16.5 (2400)
C	380 (9.5 bags)	0.55	50 – 100 (2 - 4)	12.5 – 4.75 (1/2” – No.4)	20.7 (3000)
P	440 (11 bags)	0.49	100 max. (4 max.)	19.0 – 4.75 (3/4” – No.4)	37.7 (5000)
Seal	380 (9.5 bags)	0.58	100 – 200 (4 – 8)	25 – 4.75 (1” – No.4)	20.7 (3000)

\* The measured cement content shall be within plus or minus 2 mass percent of the design cement content.

\*\* Based on 40 kg/bag

### Consistency

Concrete shall have a consistency such that it will be workable in the required position. It shall be of such a consistency that it will flow around reinforcing steel but individual particles of the coarse aggregate when isolated shall show a coating of mortar containing its proportionate amount of sand. The consistency of concrete shall be gauged by the ability of the equipment to properly place it and not by the difficulty in mixing and transporting. The quantity of mixing water shall be determined by the Architect/Engineer and shall not be varied without his consent. Concrete as dry as it is practical to place with the equipment specified shall be used.

### Batching

Measuring and batching of materials shall be done at a batching plant.

#### 1. Portland Cement

Either sacked or bulk cement may be used. No fraction of a sack of cement shall be used in a batch of concrete unless the cement is weighed. All bulk cement shall be weighed on an approved weighing device. The bulk cement weighing hopper shall be properly sealed and vented to preclude dusting operation. The discharge chute shall not be suspended from the weighing hopper and shall be so arranged that cement will neither be lodged in it nor leak from it. Accuracy of batching shall be within plus (+) or minus (-) 1 mass percent.

#### 2. Water

Water may be measured either by volume or by weight. The accuracy of measuring the water shall be within a range of error of not more than 1 percent.

#### 3. Aggregates

Stockpiling of aggregates shall be in accordance with Subsection 311.2.10. All aggregates whether produced or handled by hydraulic methods or washed, shall be stockpiled or binned for draining for at least 12 hours prior to batching. Rail shipment requiring more than 12 hours will be accepted as adequate binning only if the car bodies permit free drainage. If the aggregates contain high or non-uniform moisture content, storage or stockpile period in excess of 12 hours may be required by the Architect/Engineer. Batching shall be conducted as to result in a 2 mass percent maximum tolerance for the required materials.

#### 4. Bins and Scales

The batching plant shall include separate bins for bulk cement, fine aggregate and for each size of coarse aggregate, a weighing hopper, and scales capable of determining accurately the mass of each component of the batch. Scales shall be accurate to one-half (0.5) percent throughout the range used.

#### 5. Batching

When batches are hauled to the mixer, bulk cement shall be transported either in waterproof compartments or between the fine and coarse aggregate. When cement is placed in contact with moist aggregates, batches will be rejected unless mixed within 1-1/2 hours of such contact. Sacked cement may be transported on top of the aggregates.

Batches shall be delivered to the mixer separate and intact. Each batch shall be dumped cleanly into the mixer without loss, and, when more than one batch is carried on the truck, without spilling of material from one batch compartment into another.

#### 6. Admixtures

The Contractor shall follow an approved procedure for adding the specified amount of admixture to each batch and will be responsible for its uniform operation during the progress of the work. He shall provide separate scales for the admixtures which are to be proportioned by weight, and accurate measures for those to be proportioned by volume. Admixtures shall be measured into the mixer with an accuracy of plus or minus three (3) percent. The use of Calcium Chloride as an admixture will not be permitted.

## **Mixing and Delivery**

Concrete may be mixed at the site of construction, at a central point or by a combination of central point and truck mixing or by a combination of central point mixing and truck agitating. Mixing and delivery of concrete shall be in accordance with the appropriate requirements of AASHTO M 157 except as modified in the following paragraphs of this section, for truck mixing or a combination of central point and truck mixing or truck agitating. Delivery of concrete shall be regulated so that placing is at a continuous rate unless delayed by the placing operations. The intervals between delivery of batches shall not be so great as to allow the concrete in place to harden partially, and in no case shall such an interval exceed 30 minutes.

In exceptional cases and when volumetric measurements are authorized, for small project requiring less than 75 cu.m. per day of pouring, the weight proportions shall be converted to equivalent volumetric proportions. In such cases, suitable allowance shall be made for variations in the moisture condition of the aggregates, including the bulking effect in the fine aggregate. Batching and mixing shall be in accordance with ASTM C 685, Section 6 through 9. Concrete mixing, by chute is allowed provided that a weighing scale for determining the batch weight will be used.

For batch mixing at the site of construction or at a central point, a batch mixer of an approved type shall be used. Mixers having a rated capacity of less than a one-bag batch shall not be used. The volume of concrete mixed per batch shall not exceed the mixer's nominal capacity as shown on the manufacturer's standard rating plate on the mixer except that an overload up to 10 percent above the mixer's nominal capacity may be permitted, provided concrete test data for strength, segregation, and uniform consistency are satisfactory and provided no spillage of concrete takes place. The batch shall be so charge into the drum that a portion of the water shall enter in advance of the cement and aggregates. The flow of water shall be uniform and all water shall be in the drum by the end of the first 15 seconds of the mixing period. Mixing time shall be measured from the time all materials, except water, are in the drum. Mixing time shall not be less than 60 seconds for mixers having a capacity of 1.5m<sup>3</sup> or less. For mixers having a capacity greater than 1.5m<sup>3</sup>, the mixing time shall not be less than 90 seconds. If timing starts, the instant the skip reaches its maximum raised position, 4 seconds shall be added to the specified mixing time. Mixing time ends when the discharge chute opens.

The mixer shall be operated at the drum speed as shown on the manufacturer's name plate on the mixer. Any concrete mixed less than the specified time shall be discarded and disposed off by the Contractor at his own expenses.

The timing device on stationary mixers shall be equipped with a bell or other suitable warning device adjusted to give a clearly audible signal each time the lock is released. In case of failure of the timing device, the Contractor will be permitted to continue operations while it is being repaired, provided he furnishes an approved timepiece equipped with minute and second hands. If the timing device is not placed in good working order within 24 hours, further use of the mixer will be prohibited until repairs are made.

Re-tampering concrete will not be permitted. Admixtures for increasing the workability, for retarding the set, or for accelerating the set or improving the pumping characteristics of the concrete will be permitted only when specifically provided for in the Contract, or authorized in writing by the Architect/Engineer.

### **Mixing Concrete:**

#### **1. General**

Concrete shall be thoroughly mixed in a mixer of an approved size and type that will insure a uniform distribution of the materials throughout the mass. All concrete shall be mixed in mechanically operated mixers. Mixing plant and equipment for transporting and placing concrete shall be arranged with an ample auxiliary installation to provide a minimum supply of concrete in case of breakdown of machinery or in case the normal supply of concrete is disrupted. The

auxiliary supply of concrete shall be sufficient to complete the casting of a section up to a construction joint that will meet the approval of the Architect/Engineer.

Equipment having components made of aluminum or magnesium alloys, which would have contact with plastic concrete during mixing, transporting or pumping of Portland Cement concrete, shall not be used. Concrete mixers shall be equipped with adequate water storage and a device of accurately measuring and automatically controlling the amount of water used.

Materials shall be measured by weighing. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. The accuracy of all weighing devices except that for water shall be such that successive quantities can be measured to within one percent of the desired amounts. The water measuring device shall be accurate to plus or minus 0.5 mass percent. All measuring devices shall be subject to the approval of the Architect/Engineer. Scales and measuring devices shall be tested at the expense of the Contractor as frequently as the Architect/Engineer may deem necessary to insure their accuracy.

Weighing equipment shall be insulated against vibration or movement of other operating equipment in the plant. When the entire plant is running, the scale reading at cut-off shall not vary from the weight designated by the Architect/Engineer more than one mass percent for cement, 1-1/2 mass percent for any size of aggregate, or one (1) mass percent for the total aggregate in any batch.

## 2. Mixing Concrete at Site

Concrete mixers may be of the revolving drum or the revolving blade type and the mixing drum or blades shall be operated uniformly at the mixing speed recommended by the manufacturer. The pick-up and throw-over blades of mixers shall be restored or replaced when any part or section is worn 20mm or more below the original height of the manufacturer's design. Mixers and agitators which have an accumulation of hard concrete or mortar shall not be used.

When bulk cement is used and volume of the batch is 0.5m<sup>3</sup> or more, the scale and weigh hopper for Portland Cement shall be separate and distinct from the aggregate hopper or hoppers. The discharge mechanism of the bulk cement weight hopper shall be interlocked against opening before the full amount of cement is in the hopper. The discharging mechanism shall also be interlocked against opening when the amount of cement in the hopper is underweight by more than one (1) mass percent or overweight by more than 3 mass percent of the amount specified.

When the aggregate contains more water than the quantity necessary to produce a saturated surface dry condition, representative samples shall be taken and the moisture content determined for each kind of aggregate.

The batch shall be so charged into the mixer that some water will enter in advance of cement and aggregate. All water shall be in the drum by the end of the first quarter of the specified mixing time. Cement shall be batched and charged into the mixer so that it will not result in loss of cement due to the effect of wind, or in accumulation of cement on the surface of conveyors or hoppers, or in other conditions which reduce or vary the required quantity of cement in the concrete mixture.

The entire content of a batch mixer shall be removed from the drum before materials for a succeeding batch are placed therein. The materials composing a batch except water shall be deposited simultaneously into the mixer.

All concrete shall be mixed for a period of not less than 1-1/2 minutes after all materials, including water, are in the mixer. During the period of mixing, the mixer shall operate at the speed for which it has been designed. Mixers shall be operated with an automatic timing device that can be locked by the Architect/Engineer. The time device and discharge mechanics shall be so interlocked that during normal operation no part of the batch will be charged until the specified mixing time has elapsed.

The first batch of concrete materials placed in the mixer shall contain a sufficient excess of cement, sand, and water to coat inside of the drum without reducing the required mortar content of the mix. When mixing is to cease for a period of one hour or more, the mixer shall be thoroughly cleaned.

### 3. Mixing Concrete at Central Plant

Mixing at the central plant shall conform to the requirements for mixing at the site.

### 4. Mixing Concrete in Truck

Truck mixers, unless otherwise authorized by the Architect/Engineer, shall be of the revolving drum type, water-tight, and so constructed that the concrete can be mixed to insure a uniform distribution of materials throughout the mass. All solid materials for the concrete shall be accurately measured and charged into the drum at the proportioning plant. Except as subsequently provided, the truck mixer shall be equipped with a device by which the quantity of water added can be readily verified. The mixing water may be added directly to the batch, in which case a tank is not required. Truck mixers may be required to be provided with a means of which the mixing time can be readily verified by the Architect/Engineer.

The maximum size of batch in truck mixers shall not exceed the minimum rated capacity of the mixer as stated by the manufacturer and stamped in metal on the mixer. Truck mixing, shall, unless otherwise directed be continued for not less than 100 revolutions after all ingredients, including water, are in the drum. The mixing speed shall not be less than 4 rpm, nor more than 6 rpm.

Mixing shall begin within 30 minutes after the cement has been added either to the water or aggregate, but when cement is charged into a mixer drum containing water or surface wet aggregate and when the temperature is above 32°C, this limit shall be reduced to 15 minutes. The limitation in time between the introduction of the cement to the aggregate and the beginning of the mixing may be waived when, in the judgment of the Architect/Engineer, the aggregate is sufficiently free from moisture, so that there will be no harmful effects on the cement.

When a truck mixer is used for transportation, the mixing time specified in Subsection 405.4.4 (3) at a stationary mixer may be reduced to 30 seconds and the mixing completed in a truck mixer. The mixing time in the truck mixer shall be as specified for truck mixing.

### 5. Transporting Mixed Concrete

Mixed concrete may only be transported to the delivery point in truck agitators or truck mixers operating at the speed designated by the manufacturers of the equipment as agitating speed, or in non-agitating hauling equipment, provided the consistency and workability of the mixed concrete upon discharge at the delivery point is suitable point for adequate placement and consolidation in place.

Truck agitators shall be loaded not to exceed the manufacturer's guaranteed capacity. They shall maintain the mixed concrete in a thoroughly mixed and uniform mass during hauling.

No additional mixing water shall be incorporated into the concrete during hauling or after arrival at the delivery point.

The rate of discharge of mixed concrete from truck mixers or agitators shall be controlled by the speed of rotation of the drum in the discharge direction with the discharge gate fully open.

When a truck mixer or agitator is used for transporting concrete to the delivery point, discharge shall be completed within one hour, or before 250 revolutions of the drum or blades, whichever comes first, after the introduction of the cement to the aggregates. Under conditions contributing

to quick stiffening of the concrete or when the temperature of the concrete is 3°C, or above, a time less than one hour will be required.

**7. Delivery of Mixed Concrete**

The Contractor shall have sufficient plant capacity and transportation apparatus to insure continuous delivery at the rate required. The rate of delivery of concrete during concreting operations shall be such as to provide for the proper handling, placing and finishing of the concrete. The rate shall be such that the interval between batches shall not exceed 20 minutes. The methods of delivering and handling the concrete shall be such as will facilitate placing of the minimum handling.

**Method of Measurement**

The quantity of structural concrete to be paid for will be the final quantity placed and accepted in the completed structure. No deduction will be made for the volume occupied by pipe less than 100mm (4 inches) in diameter or by reinforcing steel, anchors, conduits, weep holes or expansion joint materials.

**ITEM NO. 902(1)a- REINFORCING STEEL(DEFORMED)**

**DESCRIPTION**

This Item shall consist of furnishing, bending, fabricating and placing of steel reinforcement of the type, size, shape and grade required in accordance with this Specification and in conformity with the requirements shown on the Plans or as directed by the Architect/Engineer.

Reinforcing shall conform to the requirements of the following Specifications:

- Deformed & Plain Billet Steel  
(ASTM A 615)
- Bars for Concrete Reinforcement  
(AASHTO M 31)
- Deformed rail -Steel and Plain  
Bars for Concrete Reinforcement  
(ASTM A 616)
- Deformed A & b – Steel and Plain  
Bars for Concrete Reinforcement  
(ASTM A 617)

**ORDER LISTS**

Before materials are ordered, all order lists and bending diagrams shall be furnished by the Contractor, for approval of the Architect/Engineer. The approval of order lists and bending diagrams by the Architect/Engineer shall in no way relieve the Contractor of responsibility for the correctness of such lists and diagrams. Any expense incident to the revisions of materials furnished in accordance with such lists and diagrams to make them comply with the Plans shall be borne by the Contractor.

**BENDING**

All reinforcing bars requiring bending shall be cold-bent to the shapes shown on the Plans or required by the Architect/Engineer. Bars shall be bent around a circular pin having the following diameters (D) in relation to the diameter of the bar (d):

Nominal diameter, d, mm	Pin diameter (D)
10 to 20	6d
25 to 28	8d
32 and greater	10d

Bends and hooks in stirrups or ties may be bent to the diameter of the principal bar enclosed therein.

**SPLICING**

All reinforcement shall be furnished in the full lengths indicated on the Plans. Splicing of bars, except where shown on the Plans, will not be permitted without the written approval of the Architect/Engineer. Splices shall be staggered as far as possible and with a minimum separation of not less than 40 bar diameters. Not more than one-third of the bars may be spliced in the same cross-section, except where shown on the Plans

Unless otherwise shown on the Plans, bars shall be lapped a minimum distance of:

Splice Type	Grade 40	Grade 60	But not less
	min. lap	min. lap	than
Tension	24 bar dia	36 bar dia	300 mm
Compression	20 bar dia	24 bar dia	300 mm

In lapped splices, the bars shall be placed in contact and wired together. Lapped splices will not be permitted at locations where the concrete section is insufficient to provide minimum clear distance of one and one-third the maximum size of coarse aggregate between the splice and the nearest adjacent bar. Welding of reinforcing steel shall be done only if detailed on the Plans or if authorized by the Architect/Engineer in writing. Spiral reinforcement shall be spliced by lapping at least one and a half turns or by butt welding unless otherwise shown on the Plans.

**REINFORCING BARS**

- Use Rebar with a grade 40 designations that offers minimum yield strength of 40,000 pounds per square inch and conforms to ASTM A-615 performance standards.
- If RSB 12mm thk and below, use grade 40.
- If RSB 16mm thk and above, use grade 40.

**ITEM NO. 804– GRAVEL FILL**

**SCOPE**

The work consists of gravel filling specifications required by the drawings.

**MATERIAL**

Gravel fill is composed of sand, gravel, crushed stone or mixtures thereof. They shall be selected as necessary to avoid the inclusion of organic matter, clay balls, excessive fine particles or other substances that would interfere with their free-draining properties. Unless specified in the plans, the material shall be well graded with 3-inch maximum size, no more than 50 percent by weight finer than the #4 sieve and no more than 5 percent by weight finer than the #200 sieve. The types of material used in the various fills shall be specified as one of the types described above or as described on the drawings.

**ITEM NO. 1003(1)a1 & (3)– CARPENTRY & JOINERY WORKS**

**CEILING SUSPENSION SYSTEM**

**SCOPE**

This specification covers the furnishing of materials and labor including equipment necessary to complete the installation of fiber cement board panels/ceiling as shown on the drawings and as specified herein.

## **MATERIALS**

(Hardiflex) Fiber Cement sheets shall be manufactured from asbestos-free materials.

- a. 4.5-mm thick for internal walls and eaves.
- b. Composition: Fiber cement board shall be asbestos free, fiber-reinforced cement sheets.
- c. Density: 1380 kg/m<sup>3</sup> minimum

Steel framing for suspended and furred ceilings

- a. Furring Channels: ASTM C 645-gauge 25 standard channels
- b. Accessories: Hangers and inserts
- c. Installation Standard: ASTM C 754

## **FASTENERS**

- Provide fasteners of type, material size, corrosion resistance, holding power and other properties required for fastening furring and framing members to substrates indicated.
- Trim Accessories: Provide metal trims accessories of profile and materials as shown on the drawings, or as otherwise required by the Architect/manufacturer.

## **METAL SUPPORT INSTALLATION**

Ceiling and Soffit Support Systems

- a. Secure hangers or rods to structural support by connecting directly to structure where possible; otherwise connect to inserts, clips or other anchorage devices or fasteners indicated.
- b. Space main runners, hangers and furring according to requirements of ASTM C754, except as otherwise indicated.
- c. Where spacing of structural members, or width of ducts or other equipment, prevents regular spacing of hangers, provide supplemental hangers and suspension members and reinforce nearest affected hangers to span extra distance.
- d. Attach directly to structural elements only; do not attaché to metal deck. Loop hangers and wire-tie directly or provide anchors or inserts.
- e. Install compression posts, splay wires and other accessories as required to comply with seismic requirements.
- f. Extend runners to within 6 inches of walls.
- g. Wire-tie or clip furring members to main runners and to other structural supports indicated. In fire resistance rated assemblies, wire-tie furring members do not clip.
- h. Do not permit furring or runners to contact masonry or concrete walls.

## **APPLICATION AND FINISHING OF FIBER CEMENT PANELS GENERAL**

- a. Apply and finish fiber cement panels as per specifications by manufacturer for flush-jointed applications.
- b. Install fiber cement panels in manner which minimizes the number of end-butt joints or avoids them entirely where possible.
- c. Install exposed fiber cement panel with face side out. Do not install imperfect, damages or damp boards. Bat boards together for slight contact at edges and ends with not more than 1.5 mm open space between boards. Do not force into place.
- d. Locate either edge or end joints over supports, except in horizontal applications where intermediate support is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered ends. Do no place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
- e. Attach fiber cement panel for supplementary framing and blocking provided for additional support at openings and cutouts.
- f. Space fasteners in fiber cement boards in accordance with referenced application and finishing standard and manufacturer specifications.

## ACCESSORY INSTALLATION

- a. Trim:
  1. Use the same fasteners to anchor trim accessory flanges as required to fasten plasterboard to supports, unless otherwise recommended by the trim manufacturer.
  2. Install metal corner beads at external corners.
  3. Install metal casing bead trim whenever edge of plaster board would otherwise be exposed or semi-exposed.
- b. Control Joints:
  1. Install control joints at the junction of plasterboard partitions with walls or partitions of other finish material.
  2. Install control within long runs of partitions, ceilings or soffits at approximately 30'-0" on center or as indicated.
  3. Where plasterboard is vertically continuous, as at stairwells, provide horizontal control joints at each floor level.
- c. Special Trim: Install as indicated on drawings and in accordance with manufacturer's instructions. (See Approved Plans and Specifications)
  1. Formica Laminates must be attached to the ceiling with proper adhesion as recommended by the architect and the manufacturer.

**Note: (All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

## ITEM NO. 1003(22) –MODULAR PARTITION

### GENERAL

Furnish labor and materials necessary for completion of work in this section as shown in approved drawings.

### INSPECTION

Compartments and urinal screens shall be installed in accordance with installation instructions. All components shall be rigid, straight and plumb. Doors and panels mounted above the finished floor.

### INSTALLATION

- a. Doors and Pilasters - Shall be 1/2" thick phenolic material.
- b. Panels and Urinal Screens - Shall be 1/2" thick phenolic material.
- c. Material - Doors, panels, pilasters and urinal screens shall be fabricated from phenolic material composed of multiple layers of melamine resin impregnated kraft paper, and a decorative surface sheet on both faces. All layers shall be fused together under high temperature and pressure.
- d. Finish - All compartments shall be water-resistant. Rough edges shall be machine sanded with a 45 degree radius edge and black finish.
- e. Color - Shall be selected from a full range of standard designer colors.
- f. Door Hardware - Shall be heavy duty, cast alloy gravity cam-action vault hinge that permits door to return to a pre-set position. Hinges, strike, keeper and coat hook shall be brushed Zamac to resist corrosion and through bolted with tamper resistant barrel nuts and shoulder screws. Cam-action hinge allows emergency access by lifting the door from the bottom.
- g. Mounting Hardware - Stainless steel stirrup brackets with brushed finish shall be secured to walls and pilasters with stainless-steel tamper-proof barrel nuts and shoulder screws. Pilaster trim shoes shall be 304 stainless steel with #4 satin finish.
- h. Construction Design - Compartments shall be floor anchored with 3/8" self-setting adjustable anchor bolts in each pilaster, concealed by a stainless-steel trim shoe.

- i. Aluminum headrail with anti-grip profile shall provide overhead bracing and span all compartments and brace the end pilaster to the back wall.

### **ITEM NO. 1004 – HARDWARE**

#### **DESCRIPTION**

This item shall consist of various types of materials and metal fittings that are necessary for completion, fabrication, and installation. Each material used shall be in compliance with the approved drawings such as, types of metal or steel.

#### **MATERIALS**

- a. Stainless Bar Handle (2" x 48")
- b. Stainless Deadbolt Locks
- c. Stainless Push Plate (3" x 12")
- d. Stainless Pull Handle (2 ½" x 12")
- e. Stainless Pull Handle Bar (1 ¾" x 8")
- f. Stainless Indicator Door Lock
- g. Door Hinges
- h. Stainless Steel Cubicle Door Hinge

### **ITEM NO. 1007(1) b– ALUMINUM FRAMED GLASS DOOR**

#### **GENERAL**

This specification covers the furnishing of materials and labor including equipment necessary to complete the installation of aluminum framed tempered glass doors. There are two types of aluminum framed tempered glass door; single-leaf and double-leaf doors, each with a specified lengths and widths as shown in the approved drawings.

#### **INSTALLATION**

##### Tempered Glass

- a. Glass pane shall be cleared with a thickness of 8 millimeters.
- b. All exposed edges shall be polished and rounded.
- c. All holes and notches to be drilled prior to the tempering process.

##### Aluminum Channels and Hardware

- a. Extruded aluminum components are #6463-T5 alloy 3/8-inch-deep profile suitable for 3/8 inch or 1/2-inch tempered glass.
- b. Buffed and bright dip anodized or powder coat painted.
- c. Screws or fasteners shall be stainless steel to prevent rust and corrosions.

##### Hinges

- a. Hinges on heavy duty glass are constructed of #320 stainless steel or solid brass.
- b. Hinges shall be self-centering within 15 degrees of closed portion.

### **ITEM NO. 1008(1) c – ALUMINUM FRAMED GLASS WINDOW**

#### **GENERAL**

Work included furnishing and installing steel windows as shown in the approved drawings. Work shall include but not be limited to steel windows (fixed, project-in, project-out, side hung-out or side hung-in), closures, trim, anchors and factory applied finishes (if required).

### Inspection

- a. Window openings shall conform to details and dimensions shown on the approved drawings.
- b. Conditions which may adversely affect the window installation must be corrected by the contractor prior to installation.
- c. Set Windows plumb, level and true to line, without warp or rack of frames or ventilators.
- d. Anchor units securely to surrounding construction with approved fasteners.
- e. The exterior joints between the windows, trim and mullions shall be properly sealed watertight with an approved sealant and nearly pointed.
- f. Attach ventilator hardware, as required, and adjust ventilators to operate smoothly free from twist and to be weather tight when closed and latched.
- g. Any Braded surface of the window finish shall be cleaned and touched up with air dry paint, as approved and furnished by the window manufacturer, in color to match factory applied finish.
- h. Use an Aluminum frame with a ¼ thick clear glass sliding window. (See approved drawings).

## **ITEM NO. 1010 (1) – WOODEN FRAMES**

### **DESCRIPTION**

This item shall consist of the materials and installation of wooden door jamb shown on the plans and in accordance with the following specification.

### **MATERIALS**

- a. 2” x 4” Good Lumber Door Jamb

### **REQUIREMENTS**

Lumber jambs when required shall be kiln dried with moisture content of not more than 14% and shall be of species indicated on the plans and/or specified under item 1003 on carpentry and joinery works.

### **INSTALLATION**

Frames shall be set plumb and square in concrete or masonry shall be painted with hot asphalt at its contact surface and provided with two rows of common wire nails 100mm long for anchorage Frame set in concrete shall be installed in place prior to concrete work.

Frames set in masonry work may be installed after laying of hollow concrete blocks, brick adobes. Space between frames and masonry shall be fully filled with cement mortar proportioned 1:3.

## **ITEM NO. 1010 (2) a – WOODEN DOORS**

### **DESCRIPTION**

This item shall consist of furnishing all materials, hardware, plant tools, labor and services necessary for complete fabrication and installation of wooden doors of the type and size as shown on the plans and in accordance with the following specifications.

### **MATERIALS REQUIREMENTS**

#### Lumber

Lumber of doors, windows and jambs, and panel when required shall be kiln dried with moisture content of not more than 14% and shall be of species indicated on the plans and/or specified i=under item 1003 on carpentry and joinery works.

### Plywood

Plywood for the veneer of solid core and hollow core flush doors shall be 3-ply, rotary cut, 6mm thick ordinary plywood, Class B grade. Analok frame with stucco flush type door with accessories at toilet cubicles and bathrooms or at places where these are exposed to moisture.

### Adhesive

Adhesive shall be water resistant resins and shall be non-staining.  
Hardware shall be specified under item 1004 on the Building Hardware.

## **CONSTRUCTION REQUIREMENTS**

### Fabrication

Wooden doors, including frames, shall be fabricated in accordance with the designs and sizes shown on the plans. The fabricated products shall be finished square, smoothly sanded and free from damage warpage.

a) Flush type solid core doors

Flush type solid core doors shall be fabricated in the same manner as the hollow core door type except that the space between stiles and rails shall be filled and fitted with wood blocks of the same species and of uniform thickness thinner by about the thickness of the plywood veneers. The Filler blocks shall be secured to either stiles or rails by nails. Stiles and rails of flush type doors shall be joined by means of blind mortise and tenon joint, tightly fitted, glued and locked with bamboo pin 5mm round

b) Lock installation

Locks of doors shall be fitted at the same height, centered 1000mm above the finished floor level. Locks shall be installed in conformity with the templates and instruction supplies with locksets. Holes for mounting locks shall be properly formed to provide to snug fit and rigid attachment of the locks to the doors. Strike plates shall be fitted on the door frame in true alignment with the lock latch.

## **INSTALLATION**

a. Frames shall be set plumb and square in concrete or masonry shall be painted with hot asphalt at its contact surface and provided with two rows of common wire nails 100mm long for anchorage. Frame set in concrete shall be installed in place prior to concrete work. Frames set in masonry work may be installed after laying of hollow concrete blocks, brick adobes. Space between frames and masonry shall be fully filled with cement mortar proportioned 1:3.

b. Hinged Doors

Hinged doors, whether panel or flush type with standard height of 2100mm and width of not more than 900mm shall be hung with four loose-pin hinges, 100 mm x 100mm. Swing out exterior doors shall be hung with four fast-pin butt hinges. Two hinges shall be fitted with 150mm third points between top and bottom edge of the door. The other two hinges shall be fitted at third points between top and bottom hinges. Care should be taken to ensure that the hinges are fitted such that third pins are aligned to ease of insertion and smoothness of operation. For added smoothness, pins should be lightly greased. Hammering of hinges to attain proper alignment shall not be allowed. For wider and heavier doors such as narra panel doors, an additional hinge shall be fitted 100mm below the top hinge to counteract the door fitting action.

## **ITEM NO. 1012(2) & (7) – GLASS AND GLAZING**

### **DESCRIPTION**

This specification covers the furnishing of materials and labor including equipment necessary to complete the installation of Glass and Mirrors as shown on the drawings.

### **MATERIALS AND INSTALLATION**

- a. 5mm thick polished round edge glass mirror.
  - Mirror shall be installed on comfort rooms. (if required in approved drawings)
- b. 10mm thick clear glass.
  - Shall be installed exclusively on doors with fixed glass that are shown on the drawings.

Note: **(All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

## **ITEM 1018 (1&2) CERAMIC TILES**

### **DESCRIPTION**

This item shall consist of furnishing all ceramic tiles and cementitious material, tools and equipment including labor required in undertaking the proper installation of walls and floor tiles as shown on the Plans and in accordance with this Specification.

### **MATERIAL REQUIREMENTS**

Ceramic tiles and trims shall be made of clay, or a mixture of clay and other materials which is called the body of the tile. Tile bodies are classified by ASTM C242 as to their degree of water absorption. Ceramic tiles and trims are manufactured either by dust-pressed process in which the clays are ground to dust mixed with a minimum of water shaped in steel dies and then fired or by plastic process in which the clays are made plastic by mixing with water, shapes by extrusion or in molds and then fired.

#### Glazed Tiles and Trims

Glazed tiles and trims shall have an impervious face of ceramic materials fused onto the body of the tiles and trims. The glazed surface may be clear white or colored depending on the color scheme approved by the Architect/Engineer Standard glazes may be bright (glossy) semi matte (less glossy) matte (dull) or crystalline (mottled and textured; good resistance to abrasion). Glazed tiles are used principally for walls; crystalline glazed tiles may be used for floor provided however that these are used as light duty floors.

#### Unglazed Tiles

Unglazed tiles shall be hard dense tile of homogeneous composition. Its color and characteristics are determined by the materials used in the body, the method of manufacture and the thermal treatment. It is used primarily for floors and walks.

#### Trim

Trims are manufactured to match wall tile color, texture and to coordinate with it in dimension. These are shaped in various ceramic trim, units such as caps, bases, coves, bullnoses, corner, angles, etc. that are necessary for edging or making a transition between intersecting planes.

#### Accessories

Accessories like some soap holders and shall be made wall mounted type with colors to reconcile with the color of the adjacent wall tiles.

### Cement

Cement shall be Portland conforming to the specification requirements defined in item 700, Hydraulic Cement.

### Sand

Sand shall be well graded fine aggregate clean river sand, free from soluble salts and organic impurities.

### Lime

Lime shall be hydrated lime with free un-hydrated oxide and magnesium oxide content not to exceed 8 percent by weight.

## **CONSTRUCTION REQUIREMENTS**

Tile work shall not be started until roughing-ins for plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage.

### Surface Preparation

- Mortar mix from scratch coat and setting bed shall consist of one part Portland cement ¼ part lime and 3 parts sand by volume. Surface to receive tile must be level, true to elevation, dry, free from dirt, oil and other ointments. Allow at least seven days curing of scratch coat and setting bed. Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.
- Bond coat shall be Portland cement paste.
- Thoroughly dampen surfaces of masonry or concrete walls before scratch coat is applied.
- On masonry or concrete surface first apply a thin coat with pressure, then to bring it out sufficient to compensate for the major irregularities of the surface to a thickness not less than 10mm. at any point.
- Evenly rate scratch coat to provide good mechanical key before the mortar mix has fully hardened.

## **INSTALLATION PROCEDURE**

Ceramic tiles shall be soaked in clean water prior to installation for a minimum of one hour.

## **CLEANING**

Clean ceramic tile surfaces thoroughly as possible upon completion of grouting. Remove all grout haze, observing tile manufacturers recommendations as to use of acid or chemical cleaners.

### Protection from Construction Dirt

- Apply a protective coat of neutral cleanser solution diluted with water in the proportion of 1:4 or 1-liter cleanser concentrate to 1-gallon water.
- In addition, cover tile flooring with heavy-duty no staining construction paper, taped in place, Just before final acceptance of the work remove paper and rinse protective coat of neutral cleaner from tile surface. Do not let protective paper get torn or removed.

## **METHOD OF MEASUREMENT**

All works performed under this item shall be measured in square meters for areas actually laid with ceramic tiles and accepted to the satisfaction of the Architect/Engineer.

- **Setting Wall Tiles:** seal wall tile thoroughly in clean water before setting. Set wall tile by trowelling neat portland cement skim coat on float coat or apply skim coat to back of each tile unit. Immediately float tile in place. Make joints straight, level and perpendicular. Maintain vertical joints plumb.
- **Grouting:** Grout joints in wall tile with neat white cement immediately after suitable area of tile has been set. Tool joints slightly concave, cut off excess mortar and wipe from face tile. Roughen interstices of depressions. In mortar joints after grout has been cleaned from surface. Fill to line of cushion tile bases or covers with mortar. Make joints between wall tile, plumbing and other built in fixtures with light colored caulking. Immediately after grout has had its initial set, give tile wall surfaces protective coat of non-corrosive soap.
- All tiles for floor and walls shall be free from laminations, serrated edges, chipped-off corners and other defects, which would adversely affect their appearance and strength. All joints between tiles and mouldings shall be filled with tile grout and then carefully wiped.
- Floor tiles in the ground and second floor must be .60mx.60m and .30mx.60m. For the toilet, .30mx.60m floor tiles shall be used and .60mx.60m tiles for the walls.

**Note: All materials to be used by this item of work must first be inspected and approved by the architect in-charge of records before installation.**

### **ITEM 1019 (1)c– WOOD TILES**

#### **DESCRIPTION**

This item shall consist of furnishing all wooden tile material, tools and equipment including labor required in undertaking the proper installation of walls and floor tiles as shown on the Plans and in accordance with this Specification.

#### **PRODUCTS**

##### **Materials**

All materials shall be furnished to the quality as specified in the construction drawings and in accordance with the Architect's/Interior Design specifications. All material qualities shall meet and/or exceed industry standards for the specified application.

##### **Underlayment, Transitions, mouldings**

- For added noise reduction, sound absorption, thermal insulation, and moisture barrier provide manufacturer's recommended underlayment for Floating applications.
- Resilient / Acoustical Underlayment: moisture resistant 3 to 6 mm (1/8" to 1/4") thick closed multi-cell polyethylene resilient sheet foam or other type with density and permeability as recommended or approved by laminate flooring manufacturer. Where the underlayment is required to have an acoustical rating care must be taken in the type and density of underlayment used and with manufacturer's claims in regard to noise reduction properties.
- Provide all available coordinating transitions and moulding pieces designated for the specified laminate collection to meet installation application for finishing and transitioning to other flooring products. Install in accordance with manufacturer's guidelines and intended use.
- Treads: one-piece laminate flooring complete with laminate wrapped bullnose nosing by full tread width for contained (boxed) stairways.
- Nosings: separate [overlapping wood] [flush laminate wrapped bullnose] [extruded aluminum] nosing for finish flooring edge at the top of stairs. Note that overlapping

nosing is secured to substrate and not to laminate floor so that the floor is free to move. Verify if overlapping nosings meet code requirements before specifying.

- Risers: matching one-piece laminate by full tread width x riser height required.
- Stringers: one-piece painted, stained wood to match laminate full depth plus base height.
- Mouldings and Trim: factory laminate wrapped MDF or HDF material wood of species, grade, and finish] to match laminate flooring pre-finished metal as selected by the Owner/Consultant in full widths, lengths, and profiles to suit conditions as required.
- Quarter Round: laminate wrapped to cover gap at walls and other fixed vertical surfaces.
- Use the following to cover expansion void at laminate flooring, wall openings (without doors) and where laminate flooring abuts another type of floor finish:
  - a. T-Moulding - doorways or thresholds to join two areas of laminate flooring
  - b. End Caps - used at end of laminate at exterior doorways.
  - c. Reducers: Tapered to join laminate flooring to other flooring materials of varying heights.
- Contractor shall submit samples of each underlayment, transition and moulding type to Consultant for approval.

### **Adhesives and Accessories**

- Provide manufacturer's recommended adhesive for optional glue application on Floating installations. Use of adhesive to seal and glue Laminate joints is not required in Commercial applications but recommended for areas that are likely subjected to topical moisture sources, as a preventative measure. See manufacturer's limitations to installation in high moisture areas in product literature.
- Adhesive for Glued-Down Components: (stair treads and risers as recommended by laminate manufacturer) high strength premium grade low VOC (solvent-free), alkaline and water resistant type specially formulated for glue-down application of laminate flooring stair components (treads and risers) and to suit material and substrate types and conditions as recommended by both adhesive and laminate flooring manufacturers. Spread rates for adhesive shall be strictly adhered to. Provide Adhesive for optional Glue Down application directly to substrate. Understand that Laminate by design is intended as a floating application with the introduction of a Locking mechanism and seldom requires the use of glue. If requested, can be fully glued provided that the manufacturer's substrate requirements are met; all recommendations shall be followed in accordance with the manufacturer's instructions.
- Substrate Filler: smooth trowelling, fast setting, non-shrinking, non-cracking, premixed filler with Portland cement and polymeric modifiers (white latex) and a minimum compressive strength of 20 MPa (2900 psi) at 28 days (or 27.6 MPa (4000 psi) where laminate is glued directly to substrate) for patching / filling / levelling substrates, with type to suit substrate conditions as recommended by adhesive / laminate flooring manufacturer.
- For moisture remediation on concrete slabs tested with ASTM method F 1869 exceeding maximum Laminate requirement of 5 lbs/1000 ft<sup>2</sup>/24 hr period, not to exceed 12 lbs/1000 ft<sup>2</sup>/ 24 hr Moisture Vapor Emission Rate (MVER) use the recommended Urethane only adhesives for Floating and Glue down installations.

## **EXECUTION**

### **Examination**

- Do not begin installation until substrates have been properly prepared.
- Verify surfaces and substrates are prepared to receive products of this section.
- If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of decorative metal.
- Examine materials before installation. Reject materials that are defective and/or damaged
- Proceed with installation only after unsatisfactory conditions have been corrected

- Moisture and alkalinity tests shall be conducted by an independent third party testing agency using testing methods and devices in accordance with NFCA requirements and laminate floor covering manufacturer's recommendations. Final moisture test results must be in compliance with industry/manufacturer's standards or meet the following:
  - a. RH In-Situ Probe test results, conducted according to ASTM F-2170, shall not exceed 85%
  - b. Anhydrous Calcium Chloride test results, conducted according to ASTM F-1869, shall not exceed an MVER of 3 lbs./ 1000 ft<sup>2</sup> over a twenty-four (24) hour period.
  - c. Alkalinity results shall not exceed a maximum pH rating of 7
- Check substrate surfaces with a metal straight edge and ensure that they are free from all bumps, ridges, and other imperfections detrimental to flooring installation for level tolerances to insure they are within industry standards.

### **Preparation**

- Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- Grinding or sanding of ridges, undulations, projections and areas of carbonation and scaling and filling and leveling of expansion joints, cracks, grooves and other irregularities

### **Installation**

- Verify floor direction and pattern with Interior Design consultant prior to installation.
- Install laminate flooring in strict accordance with flooring manufacturer's directions and to areas and patterns scheduled and detailed on drawings pre-approved shop drawings and Finish Schedules.
- Provide expansion void at perimeter vertical interfaces (walls, millwork, adjacent floor finishes, and at openings as required) of width and in accordance with flooring manufacturer's recommendations and requirements using temporary blocking if and as required and expansion material as recommended by flooring manufacturer.
- Unless otherwise indicated, install flooring symmetrically about room centre line and parallel to long dimension of room(s) and corridor(s), continuous through doorways, and cut to fit all projections, with all joints straight, true to plane, and with minimum half plank width at perimeters. Stagger end joint locations a minimum of 10 to 12" and seal all cut ends as recommended by manufacturer. When required by manufacturer install specified adhesive to laminate joints in strict accordance with manufacturer's written instructions.
- Seal perimeters of wet areas, i.e., in expansion gap under stoves, fridges, and dishwashers with a clear silicone sealant.
- Install wood base (and quarter round if required) over expansion void at perimeter of flooring secured to vertical interfaces using nails in accordance with industry standards. Ensure base does not contact floor surface and is not secured to it.
- Install protective edgings / reducer strips and laminate thresholds to all exposed laminate flooring edges and interfaces with other flooring materials as required to suit conditions, fixed as recommended by the manufacturer.
- Install metal thresholds at openings and where indicated and attached to adjacent rigid floor surface. Where thresholds cover an expansion space, ensure that they are fastened to the substrate and not to laminate flooring, to allow flooring to move (i.e., expand and contract) under the threshold.
- Install laminate flooring to treads and riser faces fitted tightly to adjacent wall surfaces allowing for expansion as required and install specified wood base and stringers fitted tightly to horizontal and vertical stair surfaces and to wall surfaces without gaps or voids.

### **Protection, Cleaning and Repairs**

- Protect installed work with Kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by manufacturer.
- Prohibit foot and wheel traffic from floors for at least 24 hours after completion.
- Before final inspection, remove protective coverings and clean floor surfaces.

- Remove and replace any items which are broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

### **ITEM NO. 1027 (3)– DECORATIVE STONE**

#### **DESCRIPTION**

This item shall consist of furnishing all decorative stone wall cladding, tools and equipment including labor required in undertaking the proper installation of stone cladding as shown on the Plans and in accordance with this Specification.

The specified material to be used as finish for the decorative column located on the stage wall of the project:

- 30 cm x 15cm Stone Wall Cladding (approved color and design)

#### **INSTALLATION**

- Prepare The Surface. Regardless of your substrate construction, the surface must be clean and free of any contaminating materials. Remove any oils, waxes, paint, curing compounds or loose debris. This is essential for the stone cladding to adhere optimally to the surface.
- Direct adhesion method is the most common wet met method employed. A wet method, by default, is considered a direct adhesion method. It makes use of a liquid latex combined with a cement-based filler powder to form cement mortar.
- The mortar is applied to the surface in thin layers. The method does not demand onsite drilling. It is the cheapest installation method.

Note: **(All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

### **ITEM NO. 1032 – PAINTING, VARNISHING & OTHER RELATED WORKS**

#### **DESCRIPTION**

This item shall consist of furnishing all paint materials, varnish and other related products, labor, tools, equipment and paint required in undertaking the proper application of painting, varnishing and related works indicated on the plans and in accordance with this specification.

#### **MATERIAL REQUIREMENTS**

##### Paint Materials

All types of paint material, varnish and other related product shall be subject to random test as to material composition by the bureau of Research and Standard, DPWH or the National Institute of Science and Technology. **(use the following approved and tested brand name: BOYSEN OR APPROVE EQUAL)**

##### Tinting Colors

Tinting colors shall be first grade quality, pigment ground in alkyd resin that disperses and mixed easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body.

##### Concrete Neutralizer

Concrete neutralizer shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.

### Silicon Water Repellant

Silicon water repellant shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.

### Patching Compound

Patching compound shall be fine powder type material like calciumine that can be mixed into putty consistency, with oil base primers and paints to fill minor surface dents and imperfections

### Varnish

Varnish shall be homogenous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.

### Lacquer

Lacquer shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvent are acetates, alcohols and ketones. Although lacquers were generally based on intrecellulose, manufacturers currently use, vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

### Shellac

Shellac shall be a solution of refined lac resin in denatured alcohol. It dries by evaporation of the alcohol. The resin is generally furnished in orange and bleached grades.

### Construction Requirements

The contractor prior to the commencement of the painting, varnishing and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.

### Surface Preparation

- All surface shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knot-holes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat, matching the color of paint.
- Interior woodworks shall be sandpapered between coats. Cracks, holes of imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surface.
- Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After all defects are corrected apply the finish coats as specified on the plans (color scheme approved).
- Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash, unprimed galvanized metal etching solution and allow it dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Architect/Engineer.

In addition, the Contractor shall undertake the following:

- Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
- Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- Painting and varnishing works shall not be commenced when it is too hot or cold.
- Allow appropriate ventilation during application and drying period.
- All hardware will be fitted and removed or protected prior to painting and varnishing works.

### **MATERIALS:**

- All paint materials shall meet the requirements of paint materials under classification class ‘A’ as prepared by the institute of Science, Manila.
- Use ‘BOYSEN’ Paints for all interior and exterior finished

- Use SKIMCOAT for wall preparation prior to painting
- All paints shall be recommended by the manufacturer for the use intended and shall be delivered to the jobsite in original containers with seals unbroken and labels intact.
- Painting materials such as Linseed oil, turpentine, thinners, shellac, lacquer, etc. shall be pure and of the highest quality obtainable and shall bear the manufacturer's label on each container or package.
- Except for ready mix materials in original containers, all mixing shall be done in the job site. No materials are to be reduced, changed or mixed except as specified by manufacturer of said materials.

## **STORAGE AND PROTECTION**

The resident Architect/Engineer shall designate a place for the storage of paint materials whenever it may be necessary to change this designated storage place, the contractor shall promptly move to the new location. The storage space shall be adequately protected from damage and paint. Paint shall be covered at all times and safeguards taken to prevent fire.

## **APPLICATION**

- Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint. Brush marks shall flaw out after application of paint.
- Paints made for application by roller must be similar to brushing paint. It must be nonstick when thinned to spraying viscosity so that it will break up easily into droplets.
- Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. This procedure changes the required properties of the paint.

## **MIXING AND THINNING**

At the time of application paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions, but not in excess of 1 pint of suitable thinner per gallon of the paint.

## **STORAGE**

All material to be used under this item shall be stored in a single place to be designated by the Architect/Engineer and such place shall be kept net and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

## **CLEANING**

All cloths and cotton waste which constitute fire hazards shall be placed in metal containers or destroyed at the end of daily works. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the Architect/Engineer.

## **Workmanship in General**

- All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- All coats shall be thoroughly dry before the succeeding coat is applied.
- Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coat as may be required shall be applied to attain the desired evenness of surface without extra cost to the University.
- Where surface is not in proper condition to receive the coat the Architect/Engineer shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed to ordered by the Architect/Engineer.

- Hardware, lighting fixture and other similar items shall be removed or protected during the painting varnishing and related work operations and re-installed after completion of the work.

**Note: All materials to be used in this item of works must first be inspected and approved by the architect prior to installation. Mock-up painting must first be done before final painting.**

## **ITEM NO. 1046 (2) a1 – MASONRY WORKS**

### **DESCRIPTION**

This item shall consist of furnishing of all necessary materials, tools, equipment and labor necessary to compete the execution of the masonry works using Concrete Hollow Blocks as shown on the plans and herein specified.

### **MATERIAL REQUIREMENTS**

- Cement shall be standard Portland cement, ASTM C- 150 -58 type I
- Aggregates shall conform to the applicable requirements of Item 405, Structural concrete.
- Water shall conform to the applicable requirements of Item 714, Water.
- Reinforcing Steel shall conform to the applicable requirements of Item 710, Reinforcing Steel and Wire Rope.
- Mortar shall consist of sand, cement and water conforming to the requirements of Item 405, Structural Concrete, mixed in the proportion of one (1) part cement to three parts sand by volume and sufficient water obtain the required consistency.
- Concrete Hollow Blocks shall have a minimum face and 3 holes and shall have a thickness of 1" (.025). Normal size shall be 6"x8"x16" and 4"x8"x16", minimum compressive strength equal or exceed those mentioned in the specification.

### **INSTALLATION**

- All masonry work shall be laid true to line, level, plumb and neat in accordance with the plans.
- Units shall be cut accurately to fit all plumbing ducts, opening for electrical works, and all holes shall be neatly patched.
- No construction support shall be attached to the wall except where specifically permitted.
- Masonry unit shall be sound, dry, clean and free from cracks when placed in the structure.
- Proper masonry units shall be used to provide for all window, doors, bond beams, lintels, plaster etc., with minimum of unit cutting.
- Where masonry units cutting are necessary, all cuts shall be neat and true to line.
- Units shall be placed while the mortar is soft and plastic. Any unit disturbed to the extent that the initial bond is broken after initial positioning shall be removed and re-laid in fresh mortar.
- Mortar should not be spread too far ahead of units, as it will stiffen and loose plasticity, especially in hot weather. Mortar that has stiffened should not be used. ASTM c 270 requires that mortar be used within 2 ½ hours of initial mixing.

### **FINISH AND APPEARANCE**

- All units shall be sound and free of cracks or other defects that interfere with the proper placement of the unit or significantly impair the strength or permanence of the construction. Minor cracks, incidental to the usual method of manufacture or minor chipping resulting from customary methods of handling in shipment and delivery, are not grounds for rejection.
- Where units are to be used in exposed wall construction, the face or faces that are to be exposed shall not show chips or cracks, not otherwise permitted, or other imperfections when viewed from a distance or not less than 6.1 m under diffused lighting.
- Five percent of a shipment containing chips, not larger than 25.4 mm in any dimension. Or cracks not wider than 0.5 mm and not longer than 25% of the nominal height of the unit, is permitted.

- The color and texture units shall be specified by the purchaser. The finished surfaces that will be exposed in place shall conform to an approved sample, consisting of not less than four (4) units, representing the range of texture or color permitted.
- A shipment shall not contain more than 5% of units, including broken unit that do not meet the requirements of the above provisions.

## **CEMENT MORTAR**

Cement mortar shall be used as base for cement plaster finish masonry and concrete walls and for grouting of masonry walls. The mixture of cement mortar to be used shall conform to the following schedule:

- Class "A" mortar shall consist of one (1) part cement four parts (4) sand and sufficient water to form a workable mixture.
- Class "B" mortar shall consist of one (1) part cement to five parts (5) sand and sufficient water to form a workable mixture.

## **MASONRY WALLS**

### **CONCRETE HOLLOW BLOCKS**

- Concrete hollow blocks to be used for walls and partitions as shown and indicated in the drawings shall have an average strength of not less than 1900 lbs. per square meter. Concrete hollow blocks shall be wetted with water before installation.
- Blocks shall be laid straight and uniform with regular running bond and with the vertical faces truly vertical and set true to line. All CHB shall be laid with cement mortar joints (1:3 or 1:4) mix, and all joints and cells shall be solidly filled from the face of the blocks to the depth of the face completely and compactly.
- Blocks shall be reinforced with 10mm vertical bars at 0.60m on centers and one horizontal bar for every third course of "4" CHB walls.
- Whenever necessary, all horizontal and vertical bars shall be anchored 20D into the concrete footings, columns and beams.
- All horizontal reinforcements shall be tied to the vertical reinforcements at every intersection with No. 16 G.I wire.

## **CONCRETE AND MASONRY FINISHES**

### **CEMENT PLASTER**

Whenever shown or indicated in the drawings, all masonry and concrete surface shall be finished with cement plaster, applied as follows:

The surface shall be wetted and thoroughly wood floated with a scratch coat of cement plaster, 3/8" thick. Cement plaster shall consist of 1:2 cement mortar.

## **ITEM 1053 (1) a- CARPET FLOOR TILES**

### **DESCRIPTION**

This item shall consist of the specification standards for modular carpet. It includes construction and installation.

### **Product Specifications**

Modular Carpet is required in all areas unless noted otherwise on the plans.

1. Fiber: Nylon
2. Construction: Tufted or Woven

3. Gauge: 1/12"
4. Stiches: 11 per inch
5. Pile Weight: 18 OZ/yr<sup>2</sup>
6. Tile Size: 500mm x 500mm
7. Anti-microbial
8. Flammability: ASTM E 648 Class I, GB8624-2012 B1(C)
9. Static Propensity: AATCC-134  $\leq$  3.5kV, GB/T 18044-2008

## EXECUTION

### Examination

- Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.
- For concrete subfloors, verify the following:
  - a. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
  - b. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- For raised access flooring system, verify the following:
  - c. Access floor substrate is compatible with carpet tile and adhesive if any.
  - d. Underlayment surface is flat, smooth, evenly planed, tightly jointed, and free of irregularities, gaps greater than [1/8 inch (3 mm)] , protrusions more than 1/32 inch (0.8 mm), and substances that may interfere with adhesive bond or show through surface.
- Proceed with installation only after unsatisfactory conditions have been corrected.

### Field Conditions and Installation

- Use trowelable leveling and patching compounds, according to Manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch unless more stringent requirements are required by Manufacturer's written instructions.
- Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by Manufacturer.
- Clean metal substrates of grease, oil, soil and rust, and prime if directed by Adhesive Manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.
- Broom and vacuum clean substrates to be covered immediately before installing carpet tile.
- Comply with Manufacturer's requirements for temperature, humidity, ventilation limitations and installation methods for the particular subfloor or substrate. If the manufacturer does not have a set standard, reference the Carpet and Rug Institute Carpet Installation Standard 2011, First Edition.
- Environmental Limitations: Do not deliver or install carpet until spaces are enclosed and weather tight, wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at occupancy levels during the remainder of the construction period.
- Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet Manufacturer.
- Where demountable partitions or other items are indicated for installation on top of carpet, install carpet before installing these items.
- All installation must meet the Manufacturer's guidelines. This is extremely important when concerning the warranty of the product.
- Installation Method: A "NO-Glue Grid" method of installation is preferred if feasible and available on modular carpet only. Other adhesives shall be of low odor/solvent content.

Verify that the installation method and only use products recommended by the Manufacturer. Selfstick method type must be approved by UH FPC.

- Maintain dye lot consistency throughout the project.
- Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by Manufacturer.
- Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, non-staining marking device.
- Stagger joints of modular carpet so carpet tile grid is offset from access flooring panel grid. Do not fill seams of access flooring panels with carpet adhesive; keep seams free of adhesive.

### **Cleaning and Protection**

- Perform the following operations immediately after installing carpet:
  - a. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
  - b. Remove yarns that protrude from carpet tile surface.
  - c. Vacuum carpet according to manufacturer's guidelines.
- Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet Manufacturer.

### **SPECIAL ITEM – WOOD PLASTIC COMPOSITE PANEL**

#### **DESCRIPTION**

This item shall consist of furnishing all wood plastic composite wall panels, tools and equipment including labor required in undertaking the proper installation of interior wood plastic composite wall panels as shown on the Plans and in accordance with this Specification.

The specified material to be used as finish for the interior walls of the project:

- 159mm x 23mm indoor WPC Wall Cladding (approved color and design).

#### **INSTALLATION**

From the professional consideration of installation, WPC wall cladding is suggested to be installed by professional construction personnel. Please clean the wall before installation and make the wall dry, smooth and clean. If there are construction industry regulations or local regulations, please install them according to the regulations.

1. Fixation of keel. Steel keel is also usually used. The space between keels should be less than 400 mm. The steel keel should be fixed on the wall with expansion screw. Antirust paint should be applied to the steel keel. Install the plastic wood keel evenly and fix it on the flat wall with expansion screws. It is recommended that the distance between each keel be less than 400mm. It need keep 3-5mm at the joint of the keel to keel to prevent expansion. When install the WPC keel. In the position of the expansion tube, drill the hole on the keel first. Then put the plastic expansion tube into the hole. Screw the screws into the expansion tube and fix the keel to the wall. The nail head should be all screwed into the keel, not exposed outside the keel, otherwise it may lead to uneven board surface.
2. Fixation of **Wood-Plastic Wallboards:**

When installing the WPC wall panel, the stainless steel starting fastener should be used first to fix the first piece board.

- First use a smaller diameter drill, lead a hole on the Part where the SS Screws into the wall board, then screw the first row of the wall board into the keel.
- Push the cut WPC wall board to the appropriate position, then screw the wall board, and so on, install in turn. It is recommended that the length of each WPC wallboard should not exceed 2.9 meters.
- After installation to the Wall, each row of the last piece of WPC wall panel use stainless steel tapping screws directly fixed on the keel.
- Install “L” shape Side cover. It can be fixed with stainless steel screws.

For plastic wood materials, the water absorption is about 0.2% and the expansion rate is about 0.5%, so when installing this wall cladding, please leave the corresponding gap between each board (3-5 mm).

Electric drill is a tool that must be used in the installation process; because the plastic wood material has a certain brittleness, when fixing the keel with the WPC material, the lead hole is first drilled, then Fix screws, but don't directly nailed. Otherwise, the material may crack and break. Nail gun can be used to fix the wall cladding too. Labor gloves are best used during construction. It is recommended to use stainless steel screws to fix the screws during installation.

Note: **(All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

### **SPECIAL ITEM- DECORATIVE PVC WALL PANEL**

#### **DESCRIPTION**

This item shall consist of furnishing all 3D decorative PVC wall panels, tools and equipment including labor required in undertaking the proper installation of interior 3D decorative PVC wall panels as shown on the Plans and in accordance with this Specification.

The specified material to be used as finish for the interior stage wall of the project:

- 0.50m. x 0.50m. 3D PVC Decorative Interior Wall Panel (approved color and design)

#### **INSTALLATION**

- Before to install 3D wall panels, clean and free of loose paint on the surface.
- Plan ahead the layout of the panels on the wall.
- Using a level, draw the panels on the wall before installing them.
- Apply glue on wall and panel.
- First install the full panels, do all the cutting at the end.
- Prime panels.
- Use the sandable drywall compound to fill the gaps between panels and sand them smooth (use fine sandpaper - 220 and up and do not apply too much pressure on the panels once sanding)
- Apply coat of primer over the joints and paint the panels.

Note: **(All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

### **SPECIAL ITEM- SOLID SURFACE COUNTERTOP**

#### **DESCRIPTION**

This item shall consist of furnishing all solid surface countertop, tools and equipment including labor required in undertaking the proper installation of interior solid surface countertop as shown on the Plans and in accordance with this Specification.

The specified material to be used as finish for the interior stage countertop of the project:

- 60cm. x 240 cm. solid surface countertop.(approved color and design)

## **INSTALLATION**

- Install all components plumb, level, and rigid; scribed to adjacent surfaces; In accordance with approved shop drawings and product data.
- Provide components in largest pieces available for proper installation.
- Form field joints using the manufacturer’s approved adhesive, with joints inconspicuous in finished work.
- Adhere undermount sinks/bowls to the countertop using the manufacturer’s recommended adhesive.
- Anchor solid surface tops securely to base cabinets or supports according to manufacturer’s recommendations.
- Provide solid surface material sinks and bowls with overflows in locations shown on shop drawings.
- Cut and finish component edges with clean, sharp returns.
- Carefully remove scratches and clean entire surface.
- Install countertops with no more than 1/8” sag or other variation from a straight line.

Note: (All materials to be used must be inspected and approved by the architect in charge of records prior to installation)

## **B.5- PROJECT BILLBOARD**

Preparation and installation of project billboard:

1. the billboard design layout, dimension and letter sizes on white background shall be depicted on a standard billboard measuring 1200mm x 2440mm (4ft x 8 ft) using 12.50mm (½ inch) marine plywood or tarpaulin of the same size posted on 5mm (3/16 inch) marine plywood.
2. Billboard shall be replaced with the new one adopting the above guidelines.
3. The billboard shall be installed in front of the project site.
4. Name(s) and/or picture(s) of any presonages should not appear in the billboard.

## **ITEM NO. 1002 – PLUMBING WORKS**

### **GENERAL**

- The Contractor shall furnish all labor, materials and equipment necessary to complete all the works for the sanitary, drainage and water supply system. The owner shall provide necessary drilling of water well and shall yield substantial quantity/volume of water needed to have a functional water supply system to project site either in rainy or dry seasons. The Owner shall likewise arrange/secure consent/approval of tapping to existing water line if necessary or requested by authorities concerned.
- All works shall comply with the provisions of the Philippine National Plumbing Code, MWSS regulations, DPWH guidelines and all other codes and ordinance other local authorities having jurisdiction over the project.
- “Roughing-in” for all pipes and fixtures shall be carried along with the building construction. Correct location for the pipes shall be kept in the walls and floor as specified on the plans.

## MATERIALS

- All materials must bear the trademarks as reference of the manufacturers. The Contractor shall furnish the Engineer with the original and copies of the certificate of origin of materials to be used.
- Soil, waste, Vent Pipes and Fittings shall be made of Unplasticised Polyvinyl Chloride (uPVC) - Series 1000 or whatever is indicated in the drawing and shall be manufactured by “Neltex” or its approved equivalent on property certificated by Bureau of Product Standard.
- Water pipes shall be made of G.I Pipes and fittings shall be made of G.I or whatever indicated in the drawings and shall be approved equal in property certificated by Bureau of Product Standard.
- Cleanouts shall be the same as pipe Ø, installed in connection with UPVC hubs and spigot pipes consist of a long sweep quarter extended as indicated in the drawings. An extra heavy cast brass ferrule with countersunk trap screw cover caulked into hub of the fittings shall be flushed with the floors.
- Floor drains shall be stainless steel plated or approved equal, and locally manufactured.
- Gate valves shall be G.I or bronze solid wedge type with screwed ends, or its equivalent as approved by the Engineer.
- Plumbing fixtures and equipment shall be properly identified to illustrate the quality and design of fixture that will be required. All fixtures shall have supply line with cut-off valves having chromium finish and shall be as manufactured by Philippine Standards as follows:
- Water closet shall be of floor mounted tank type complete with all fittings. Color shall be approved by the Architect/Engineer.
- *Stainless Steel Sink* shall be used in all counters with sink as indicated in the drawings. Lavatory shall be complete with necessary fittings.
- Provide traps at every plumbing fixture and other equipment requiring connection to the drainage system.
- Adapters shall be used to join pipes, fittings of different types and sizes and different combination approved by the Engineer.

### Materials Use:

- Water Closet, w/ Bidet Hose, complete w/ fittings and accessories (HCG Brand)
- Wall Hung Lavatory with fittings and accessories (Cool Brand)
- Urinal, complete w/ fittings and accessories (Cool Brand)
- Stainless Kitchen Sink (Single/ Double)
- Shower, complete w/ fittings and accessories
- Faucet (Cool Brand)
- 360° Rotation Flexible Gooseneck Kitchen Faucet
- Stainless Steel Grease Trap
- 4” Stainless Floor drain
- PPRC. Pipe 25mmØ X 4m, PN16
- PPRC. Pipe 20mmØ X 4m, PN16
- PPRC Gate Valve, 25mmØ
- PPRC Gate Valve, 20mmØ
- 1Hp Motor Pump w/ fittings and accessories
- Stainless Steel Water Tank (Grade 304)
- Sub-meter w/ fittings and accessories
- Corporate valve

## **METHODS OF CONSTRUCTION**

All work shall be done by skilled worker only under the supervision of a master plumber. Contractor shall perform the work in accordance with good workmanlike practice to the satisfaction and approval of the Engineer.

On completion of the sanitary, drainage and water supply system and plumbing work and upon delivery of the building, the Contractor shall submit the “as-built” drawings of the entire plumbing system layout as actually installed in the building for future reference.

## **INSTALLATION**

- Install plumbing fixtures free and open to afford easy access for cleaning. Install fixtures as indicated on drawings, furnishings all brackets, cleats, plates and anchors required to support fixtures rigidly in place.
- Install fixture and accessories in locations directed in accordance with manufacturer’s instructions, minimizing pipe fittings.
- Protect items with approval means to maintain perfect conditions. Remove work damaged or defective and replace with perfect work without extra cost to the University.
- All G.I. solid and drainage pipes shall have a minimum slope of 1%.
- Vertical pipes shall be secured strongly by hooks to building framing. Provide suitable bracket or chairs at the floors from which they start.
- Where an end or circuit vent pipe from any fixtures or line of fixtures is connected to a vent line serving other fixtures, connection shall be at least four (4) feet 1.20 M above floor on which fixtures are allocated, to prevent use of any vent line as a waste.
- Horizontal pipes shall be supported by well secured strap hangers.
- Connection of water closets to soil pipes shall be made by means of flanged Plates and asbestos packing without use of rubber putty or cement.
- Make all joints air and water-tight; for jointing pipes, caulk with oakum or jute and soft pig lead.
- For bell and spigot jointed cast iron and waste pipes, caulk with oakum or jute and soft pig lead.
- Lead to cast iron pipes use brass ferrule wiped on lead side and caulked into ball of cast iron soil pipe.
- Concrete pipes: bell or spigot or tongue and groove use yarning material and cement mortar.
- G.I. Pipes – Use Teflon Tape or white lead when tightening threaded joints.

## **ROUGH-IN**

- Provide correctly located opening of proper sizes where required in walls and floors for passage of pipes.
- All items to be embedded in concrete shall be thoroughly clean and free from all rust, scale and paint.
- All changes in pipe sizes on soil, wash and drain lines shall be provided with reducing fittings or recesses reducers. For changes in pipe sizes provide reducing fittings.

- High corrosive nature ground within site shall be taken into account by a plumber. Protective features shall be installed to prevent corrosion of all water pipes installed underground.
- Extend piping to all fixtures, outlets and equipment from gate valves installed in the branch near the riser.
- All pipes shall be cut accurately to measurements, and worked into place without springing or forcing.
- Care shall be taken as not to weaken structural portion of the Building.

## **TESTING**

Materials shall be subjected to such standard tests as may be required to ascertain their fitness, and the complete plumbing system shall be tested with the presence of the Engineer of the following methods.

The water test shall be applied to the plumbing system in its entirety or in sections. If applied to the entire system, all openings in the piping system shall be tightly closed except the highest opening and the entire system filled with water to the pint of overflow. All dead ends shall be relieved of air during the process whether the test is by section or it's entirely. If the system is tested by sections, each opening of section shall be filled with water.

## **DISINFECTION**

The entire water distribution system shall be thoroughly, flushed and disinfected with a solution containing not less than fifty (50) part per million (50 ppm) of available chloride. The chlorinating materials shall be either liquid chloride or calcium hypo chloride or chloride lime. The disinfecting solution shall be allowed to remain in the system for a period of sixteen (16) hours, during which all valves and faucets shall be opened and closed several times. After disinfection, the solution shall be flushed from the system with clean water until the residual chorine content is not greater than 0.2 parts per million.

## **CLEANING AND PAINTING**

All exposed metal surfaces shall be rid of grease dirt or other foreign materials. Chrome or nickel-plated piping, fittings and trimmings shall be polished upon completion. All equipment, pipes, valves and fittings shall be cleaned of greased and sludge.

- a. Any damages to the building finish or furnishing due to the Contractor's failure to properly clean the piping system shall be repaired by the Contractor at his expense.
- b. All exterior surfaces of piping to be installed in or through concrete, tile floors and underground shall be given one coat of acid-resisting paint with a bituminous base.
- c. After completion of all work the fixtures, fittings, accessories and other materials shall be thoroughly cleaned and delivered in a good condition satisfactory to the Engineer.

## **MAINTENANCE**

The Contractor shall maintain and keep the works in good condition in accordance with Specification. During the period of maintenance, the Contractor shall make good all defects which may appear in the pipelines trench, and in the lots in which the pipes are lined.

## **DESCRIPTION**

This item shall consist of furnishing all materials, tools, equipment and fixtures required as shown on the Plans for the satisfactory performance of the entire plumbing system including installation in accordance with the latest edition of the National Plumbing Code, and this Specification.

## **MATERIAL REQUIREMENTS**

All piping materials, fixtures and appliances fitting accessories whether specifically mentioned or not but necessary to complete this item shall be furnished and installed.

### **SEPTIC TANK**

The septic tank shall be provided as shown on the Plans including all pipe vents and fittings. The various construction materials such as concrete masonry work shall conform to the corresponding items of this specification. Inlet and outlet pipes shall conform to the latest edition of the National Plumbing Code.

### **APPROVED ALTERNATE PIPES AND FITTINGS**

Pipes and fittings for sanitary and potable water lines as approved alternate shall be Unplasticized Polyvinyl Chloride Pipes and Fittings (UPVC). Pipes and fittings shall be made of virgin materials conforming to specification requirements defined in ASTM D-2241 and PNS 65:1986. Fittings shall be molded type and designed for solvent cement joint connection for water lines and rubber O-ring seal joint for sanitary lines.

### **PLUMBING FIXTURES AND FITTINGS**

All fittings and trimmings for the fixtures shall be chromium plated and polished brass unless otherwise approved. Exposed traps and supply pipes for the fixtures shall be connected to the roughing in, piping system at the wall unless otherwise indicated on the Plans. Built in fixtures shall be watertight with provision of water supply and drainage outlet, fittings and trap seal. Unless otherwise specified, all plumbing fixtures shall be made of vitreous china complete with fittings.

Water closet shall be vitreous china, free standing toilet combination, round front bottom outlet siphonic washdown bowl with extended rear self and closed coupled tank with cover complete with fittings and mounting accessories. Model make and color shall be submitted for approval prior to delivery at jobsite by the Architect/Engineer.

Lavatory shall be vitreous china, wall hung with rear overflow and cast in soap dishes, pocket hanger with integral china brackets, complete with twin faucets, supply pipes, P-trap and mounting accessories. Model make and color shall be approved by the Architect/Engineer.

#### Bathroom and Toilet Accessories

Shower head and fitting shall be movable, cone type with escutcheon arm complete with stainless steel shower valve and control lever, all exposed surface to be chromium finish. Grab bars shall be made of tubular stainless steel pipe provided with safety grip and mounting flange. Floor drains shall be made of stainless steel beehive type, measuring 100mmx 100mm and provided with detachable stainless strainer, expanded metal lath type. Toilet paper holder shall be vitreous china wall mounted. Color shall reconcile with the adjacent fixture and facing tiles. Soap holder shall be vitreous china wall mounted. Color shall reconcile with the adjacent tile works. Faucet(s) shall be made of stainless steel for interior use. Hose-bib(s) shall be made of bronze cast finish.1

## **CONSTRUCTION REQUIREMENTS**

The Contractor before any installation work is started shall carefully examine the Plans and shall investigate actual structural and finishing work condition affecting all his work. Where actual condition necessitates a rearrangement of the approved pipe layout, the contractor shall prepare Plan(s) of the proposed pipe layout for approval by the Architect /Engineer.

#### Installation of Soil, Waste, Drain and Vent Pipes

- All pvc pipe shall be pitch 6mm per 300mm but in no case flatter than 3mm per 300mm.

- Horizontal lines shall be supported by well secured length heavy strap hangers. Vertical lines shall be secured strongly by hooks to the building frame and a suitable brackets or chairs shall be provided at the floor from which they start.
- All main vertical soil and waste stacks shall be extended full size to and above the roof line to act as vents, except otherwise indicated in the Plans.
- Vent pipes in roof spaces shall be run as close as possible to under side of roof with vertical piping pitched down to stacks without forming traps. Vertical vent pipes may be connected into one main vent riser above the highest vented fixtures. Where an end or circuit vent pipe from any fixtures is connected to a vent line serving other fixtures, the connections shall be at least 1.20m above the floor on which the fixtures are located.
- Horizontal waste line receiving the discharge from two or more fixtures shall be provided with end vents unless separate venting of fixture is noted on the Plans.
- All changes in pipe sizes on soil and waste lines shall be made with reducing fittings or recessed reducers. All changes in directions shall be made by appropriate use of 45 degrees' wyes, half wyes, long sweep quarter bends or elbows may be used in soil and waste lines where the change of direction of flow is from the horizontal to the vertical and on the discharge from waste closets. Where it becomes necessary to use short radius fittings in other locations the approval of the Architect/Engineer shall be obtained prior to installation of the same.
- All joints of cast iron pipes in bell and spigot shall be firmly packed with oakum or hemp and caulked with pig lead at least 25mm deep.
- Each fixture and place of equipment requiring connection to the drainage system except fixtures with continuous waste shall be equipped with a trap. Each trap shall be placed as near to the fixture as possible.

#### Water Pipe, Fittings and Connections

- All water pipings inside the building and underground, 100mm. diameter and smaller shall be galvanized iron threaded pipe with malleable iron fittings.
- The water piping shall be extended to all fixtures, outlets and equipment from the gate valves installed in the branch near the riser.
- The cold water system shall be installed with a fall towards a main plugged and left ready for future connections.

#### Main branches

- All pipes shall be cut accurately to measurements and shall be worked into place without springing or forcing. Care shall be taken so as not to weaken the structural portions of the building.
- All piping above the ground shall be run parallel with the lines of the building unless otherwise indicated in the plans.
- All service pipes, valves and fittings shall be kept at sufficient distance from other work to permit finished covering not less than 12.5mm from such work or from finished covering on the different service.
- No water piping shall be buried in floors, unless specifically indicated on the plans and approved by the Architect/Engineer.
- Changes in pipes shall be made with reducing fittings.

#### Valves and Hose Bibs

- Valves shall be provided on all supplied fixtures as herein specified.

- The cold water connections to the domestic hot water heater shall be provided with gate valves and the return circulation connection shall have gate and a check valve.
- All connection to domestic hot water heaters shall be equipped with unions between valves and tanks.
- Valve shall not be installed with its stem below the horizontal. All valves shall be gate valves unless otherwise indicated on the plans.
- Valves up to and including 50mm diameter shall be threaded ends, rough bodies and finished trimmings, except those on chromium plated brass pipe.
- Valves 63mm in diameter and larger shall have iron bodies, brass mounted and shall have either screws or flange ends.
- Hose bibs shall be made of brass with 12.5 mm inlet threads, hexagon shoulders and 199mm male.

#### Fixtures, Equipment and Fastening

- All fixtures and equipment shall be supported and fastened in a safe and satisfactory workmanship as practiced.
- All fixtures, where required to be wall mounted on concrete or concrete hollow block wall, fasten with brass expansion bolts.
- Expansion bolts shall be 6mm diameter with 20mm threads to 25 mm into solid concrete, fitted with loose tubing or sleeves of proper length to acquire extreme rigidity.
- Inserts shall be secured anchored and properly flushed into the walls. Inserts shall be concealed and rigid. Bolts and nuts shall be horizontal and exposed. It shall be provided with washers and chromium plate finish.

#### Pipe Hangers, Inserts and Supports

- Pipe hangers shall be wrought iron or malleable iron pipe spaced not more than 3m part for horizontal runs or pipe, except hub and spigot soil pipe which shall have hanger spaced not over 1.50 m apart located near the hub.
- Chains, straps perforated turn-buckles or other approved means of adjustment except the turn-buckles may be omitted for hangers on soil or waste lines or individual toilet rooms to maintain stacks when spaced does not permit.
- Trapeze hangers may be used in lieu of separate hangers on pipe running parallel to and close to each other.
- Inserts shall be cast steel and shall be of type to receive a machine bolt or nut after installation. Insert may be permitted adjustment of the bolts in one horizontal direction and shall be installed before pouring of concrete.
- Wrought iron clamps or collars to support vertical runs of pipe shall be spaced not more than 6m apart for as indicated on the plans.

#### Plates and Flashing

- Plates to cover exposed pipes passing through floor finished walls or ceiling shall be fitted with pvc pipe.
- Plates shall be large enough to cover and close the hole around the area where pipes pass. It shall be properly installed to insure permanence.

- Roof areas penetrated by vent pipes shall be rendered watertight by lead sheet flashing and counter flashing. It shall extend at least 150mm above the pipe and 300 mm along the roof.

#### Protection and Cleaning

- During installation of fixtures and accessories and until final acceptance, protect items with strippable plastic or other approved means to maintain fixtures in perfect conditions.
- All exposed metal surfaces shall be polished clean and rigid of grease, dirt or other foreign materials upon completion.
- Upon completion, thoroughly clean fixtures and accessories to leave the work in polished condition.

#### Inspection, Warranty Test and Disinfection

All pipes, fittings, traps, fixtures, appurtenance and equipment of the plumbing and drainage system shall be inspected and approved by the Architect/Engineer to insure compliance with all requirement of all codes and regulations referred to in this specifications.

#### **DRAINAGE SYSTEM TEST**

The entire drainage and venting system shall have all necessary openings which can be plugged to permit the entire system to be filled with water to the level of the highest stack vent above the roof.

The system shall hold this water for a full 30 minutes during which time there shall no drop greater than 102 mm.

Where only a portion of the system is to be tested, the test shall be conducted in the same manner as described for the entire system except the vertical stack 3.00 m highest horizontal line to be tested may be installed and filled with water to maintain sufficient pressure or water pump may be used to supply the required pressure.

If and when the Architect/Engineer decides that an additional test is needed, such as an air to smoke test on the drainage system, the Contractor shall perform such test without any additional cost.

#### **WATER TEST SYSTEM**

Upon completion of the roughing-in and before connecting fixtures the entire cold water piping system shall be tested shall be tested at a hydrostatic pressure 1 ½ times the expected working pressure in the system during operation and remained tight and leak-proofed.

Where piping system is to be concealed the piping system shall be separately in manner similar to that described for the entire system and in the presence of the Architect/Engineer or his duly designated representative.

#### **DEFECTIVE WORK**

- All defective materials replaced and tested will be repeated until satisfactory performance is attained.
- Any material replaced for the satisfactory performance of the system made shall be at the expense of the Contractor.
- Caulking of screwed joints or holes will not be permitted.

## **AS-BUILT DRAWINGS**

Upon completion of work, the Contractor shall submit two sets of prints with all as-built changes shown on the drawings in a neat workmanship manner. Such prints shall show changes or actual installation and conditions of the plumbing system in comparison with the original drawings.

### **ITEM NO. 1200 (13) a – AIRCONDITIONING**

#### **GENERAL**

All work shall be done under the direct supervision of the architect/engineer and in strict accordance with these specifications and design. The installation shall be done by the expertise or from the service center of specific manufacturer/ Supply Company. Beforehand, all materials/product to be used prior to installation must be inspected and checked by the architect/engineer. Architect's/Engineer's approval on the brand of materials, and product description is important for proper material/product efficiency and durability.

Model shall be submitted for approval prior to delivery at jobsite by the Architect/Engineer.

### **ITEM NO. B.7 - OCCUPATIONAL SAFETY AND HEALTH**

#### **GENERAL**

##### **Personal Protective Equipment**

The Contractor shall, at his own expense, furnish his workers with protective equipment for eyes, face, hands and feet, lifeline, safety belt/harness, protective shields and barriers whenever necessary by reason of the hazardous work process or environment, chemical or radiological or other mechanical irritants or hazards capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical agent.

Provision of personal protective equipment (PPE) shall be in accordance with Rule 1080 of the OSHS. The equivalent cost for the provision of PPE (life span, depreciation, replacement, etc.) shall be an integral part of the project cost.

- The employer shall provide adequate and approved type of protective equipment. Workers within the construction project site shall be required to wear the necessary PPE at all times.
- Construction workers who are working from unguarded surfaces six (6) meters or more above water or ground, temporary or permanent floor platform, scaffold or where they are exposed to the possibility of falls hazardous to life or limb, must be provided with safety harnesses and life lines.
- Specialty construction workers must be provided with special protective equipment, such as specialized goggles or respirators for welders and painters or paint applicators.
- All other persons who are either authorized or allowed to be at a construction site shall wear appropriate PPE.

##### **Construction Safety Signages**

Construction Safety Signages must be provided to warn the workers and the public of hazards existing in the workplace. Signages shall be posted in prominent positions at strategic location as assigned by the architect and, as far as practicable, be in the language understandable to most of the workers employed.

The signages include but are not limited to:

- Mandatory requirement on the usage of personal protective equipment prior to entry to the project site.

- Areas where there are potential risks of falling objects.
- Areas where there are potential risks of falling.
- Areas where explosives and flammable substances are used or stored.
- Areas where there are tripping or slipping hazards.
- Approaches to working areas where danger from toxic or irritant airborne contaminants/substances may exist which should indicate the name of the contaminant/substance involved and the type of respiratory equipment to be worn.
- All places where contact with or proximity to electrical/facility equipment can cause danger.
- All places where workers may come in contact with dangerous moving parts of machineries or equipment.
- Location of fire alarms and firefighting equipment.
- Instructions on the usage of specific construction equipment.
- Periodic updating of man-hours lost.

Signages should be regularly inspected and maintained in good condition. Signages that are damaged or illegible or that no longer apply should be removed and replaced by the safety officer, as needed.

**Note:** The contractor shall also provide at his own expense, furnish the assessment and inspectorate team of the procuring entity with protective equipment for eyes, face, hands and feet, lifeline, safety belt/harness, protective shields and barriers whenever necessary by reason of the hazardous work process or environment, chemical or radiological or other mechanical irritants or hazards capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical agent.

## **ITEM NO. 1202(1) – AUTOMATIC FIRE SPRINKLER SYSTEM**

### **GENERAL**

Work Included Furnish and install steel windows as shown in the approved drawings. Work shall include but not be limited to (fixed, project-in, project-out, side hung-out or side hung-in) frames, closures, trim, anchors and factory applied accessories (if required).

Furnish all materials and labor for the detailed design and installation for complete fire sprinkler. All work shall be performed in accordance with the approved drawings and specifications.

## **ITEM 1208- FIRE ALARM SYSTEM**

### **FIRE CONTROL PANEL**

The Networked Intelligent Addressable Fire Alarm Control Panel (FACP) shall consist of 3 nos. of addressable Loop driver cards, Communication card for repeater panel located at around 500 meter distance, TCP/IP Network card, 240V AC power supply input and in-built battery backup. The capacity of battery (AH) shall be selected so as to operate the Fire alarm system control panel, repeater panel, detectors and other components for 24 hours in standby mode plus 30 mins. in alarm mode.

1. The Fire Alarm Control Panel shall have an operator interface control and annunciation panel with a backlit liquid crystal display, individual colour coded system status LED's, and an alphanumeric keypad for the field programming and control of the fire alarm system. The FACP shall control and communicate with the addressable detectors, addressable modules, repeater panel, annunciators and other system controlled devices like Audio Alarm hooter, Fire Contact output and Alarm output.
2. It shall be possible to:
  - Enable, disable or adjust sensitivity of any addressable device through the system keypad or operator terminal and store events in a non-volatile memory and generate system status reports.

- Provide Zoning facility (at least 10 nos of independent zones and their respective LED indications), Alarm threshold adjustment (for pre-signal alarm signal), Environmental Effect Compensation, Alarm verification, Disabling of detectors, detection of field wiring faults, detector mismatch, Power failure auto restart etc.
  - Test the functioning of all modules, detectors, and healthiness of loop wiring, etc. and reporting of all the troubles online.
  - Remote Program, configuration and monitoring of FACP via TCP/IP network card (Relavant software to be provided by bidder).
3. Input Signal Processing at FACP
- The control panel and loop cards shall have facility for connection via a fully supervised two-wire loop circuit (class A wiring).
  - Each loop driver card shall be able to handle 00 - 99 detector inputs.
  - Reverse polarity or fault in the field wiring shall not damage the detector.
  - Reporting of fire alarms shall have priority over faults. However, provision shall be made to see all the fire and fault alarms.
4. Malfunction Monitoring in FAC
- All the detection line circuits shall be monitored against open circuit, short circuit and ground faults. If malfunction occurs in any detection line, the control panel shall indicate a trouble condition for that detection line. In addition, the following criteria shall also be met:
- Fault in one detection line shall not affect the functioning of other detection lines. A single open circuit shall not inhibit the detection capability of a detection circuit; the remaining circuit should still remain functional.
  - A short circuit shall not inhibit the detection capability of a detection circuit.
  - A single Ground fault shall not inhibit the detection capability of a detection line

## **ENCLOSURE**

The cabinets of FAS control panel shall be suitable for wall mounting.

The cabinets shall be primed and powder coated with a corrosion resistant paint with manufacturer's standard finish.

The panel shall have front door with standard industrial key-lock facility.

The cabinet shall have gasket sealing with ingress protection class IP31 or higher.

## **MULTI SENSOR DETECTOR**

Plug in type Addressable Multiple criteria / Multi-Sensor detectors combined (Photo + Thermal) with detector mounting base & required accessories:

The detectors shall incorporate, at least, two separate sensing elements, Infrared photo diode, a photoelectric smoke sensing chamber using the optical scatter principle and thermal detection using a thermistor/ temperature detector. It shall also be possible to configure the detector to work in a degraded mode such as only photoelectric type or only thermal type in case of failure of other sensing element. It shall have built-in automatic compensation for changes in ambient conditions.

## **REPEAT RESPONSE INDICATOR**

Remote/ Repeat Response Indicator & required accessories:

Repeat response indicators shall provide LED indication for the detectors to which it is connected. These are for detectors, whose visual indicators cannot be seen due to physical obstruction. The repeat response indicator shall be capable of working with simple 2- wire connection from the detector.

## **FAULT ISOLATOR MODULE**

Addressable Fault / Loop isolator module with Surface mounting base & required accessories:

In case of a wire-to-wire short, the Fault Isolator Module shall automatically open-circuit (disconnect) the loop. When the short circuit condition is corrected, the Fault Isolator Module shall automatically reconnect the isolated section. It shall not be necessary to replace or reset the Fault Isolator Module after its normal operation. It shall provide LED flashing indication to indicate that the Isolator is

operational and shall illuminate steadily to indicate that a short circuit condition has been detected and isolated.

### **MANUAL CALL POINT**

Manual Call Points (MCP) shall be addressable and comprises of a push button placed in a suitable metallic enclosure with a break glass or fibre front cover, suitable for use in outdoor environment with a "Break glass" message on the glass.

### **ELECTRONIC SOUNDER**

Addressable wall mounted electronic Sounder/Hooter with base and required accessories:  
The electronic Sounders shall have DB level of 90 dBs at 1 meter away. It shall be field programmable without the use of special tools and a multi tone facility.

### **CABLES**

2C x 1.5 Sq.mm Multistrand Copper, PVC insulated, Overall shielded, FRLS sheathed cable for Fire alarm system for field wiring between fire detectors and FAS Panel inside the existing 25 mm MS conduit or GI flexible conduits at end portions. The cable shall be conforming to IS- 15908: 2011 and the PVC insulated copper conductor cables shall be conforming to IS- 694.

### **SCOPE OF INSTALLATION AND COMMISSIONING**

1. Installation as per drawings provided, testing & commissioning of Fire Alarm Control Panel with loop driver cards and Repeater Panel, all supplied items addressable Detectors, Isolators, MCPs, Sounders with base plate and hardware accessories on turnkey basis.
2. Laying and termination of 2C x 1.5 Sq.mm FRLS cable (internal cabling between FAS panel and other components) with all necessary accessories like cable compression glands, lugs, ferruling, end termination, cable tags, through existing 25 dia MS conduits or supplied flexible conduits at end portions for all types of detectors and peripherals for connectivity with the FAS panel.
3. Installation of MS conduits in trench / wall including clamping / fixing of conduits (required MS conduit accessories to be provided by the vendor), Laying in MS conduits and termination of the supplied Cable between Repeater panel and Fire alarm Panel.
4. From the nearest available 240 V AC power supply source, the vendor has to extend power supply to the FAS Panel and Repeater panel. The required cabling, casing/capping locally is included in the scope of the vendor.
5. The control panel & repeater panel shall be anchored on wall. All non-conducting metallic parts shall be connected to a Grounding bus at the bottom of panels. The grounding bus shall be connected to the grounding system of the building.

### **SPECIAL ITEM – DEMOLITION WORK**

#### **PART 1 - GENERAL**

##### **1.1 DESCRIPTION:**

This section specifies demolition and removal of buildings, portions of buildings, utilities, other structures and debris from trash dumps shown.

##### **1.2 RELATED WORK:**

- A. Demolition and removal of roads, walks, curbs, and on-grade slabs outside buildings to be demolished:
- B. Safety Requirements ACCIDENT PREVENTION PLAN (APP).
- C. Disconnecting utility services prior to demolition GENERAL REQUIREMENTS.
- D. Reserved items that are to remain the property of the Government GENERAL REQUIREMENTS.

- E. Asbestos Removal: TRADITIONAL ASBESTOS ABATEMENT.
- F. Lead Paint LEAD-BASED PAINT REMOVAL AND DISPOSAL.
- G. Environmental Protection: TEMPORARY ENVIRONMENTAL CONTROLS.
- H. Construction Waste Management: CONSTRUCTION WASTE MANAGEMENT.
- I. Infectious Control: SAFETY REQUIREMENTS, INFECTION CONTROL.

### **1.3 PROTECTION:**

- A. Perform demolition in such manner as to eliminate hazards to persons and property; to minimize interference with use of adjacent areas, utilities and structures or interruption of use of such utilities; and to provide free passage to and from such adjacent areas of structures. Comply with requirements of GENERAL CONDITIONS Article, ACCIDENT PREVENTION.
- B. Provide safeguards, including warning signs, barricades, temporary fences, warning lights, and other similar items that are required for protection of all personnel during demolition and removal operations. GENERAL REQUIREMENTS, Article PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS.
- C. Maintain fences, barricades, lights, and other similar items around exposed excavations until such excavations have been completely filled.
- D. Provide enclosed dust chutes with control gates from each floor to carry debris to truck beds and govern flow of material into truck. Provide overhead bridges of tight board or prefabricated metal construction at dust chutes to protect persons and property from falling debris.
- E. Prevent spread of flying particles and dust. Sprinkle rubbish and debris with water to keep dust to a minimum. Do not use water if it results in hazardous or objectionable condition such as, but not limited to; ice, flooding, or pollution. Vacuum and dust the work area daily.
- F. Before beginning any demolition work, the Contractor shall survey the site and examine the drawings and specifications to determine the extent of the work. The contractor shall take necessary precautions to avoid damages to existing items to remain in place, to be reused, or to remain the property of the // Medical Center // Cemetery Property //; any damaged items shall be repaired or replaced as approved by the Resident Engineer. The Contractor shall coordinate the work of this section with all other work and shall construct and maintain shoring, bracing, and supports as required. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal works. Repairs, reinforcement, or structural replacement must have Resident Engineer's approval.

### **1.4 UTILITY SERVICES:**

- A. Demolish and remove outside utility service lines shown to be removed.
- B. Remove abandoned outside utility lines that would interfere with installation of new utility lines and new construction.

## **PART 2 - PRODUCTS (NOT USED)**

## **PART 3 – EXECUTION**

### **3.1 DEMOLITION:**

- A. Completely demolish and remove buildings and structures, including all appurtenances related or connected thereto, as noted below:
  - 1. As required for installation of new utility service lines.
  - 2. To full depth within an area defined by hypothetical lines located 1500 mm (5 feet) outside building lines of new structures.
- B. Debris, including brick, concrete, stone, metals and similar materials shall become property of Contractor and shall be disposed of by him daily, Materials that cannot be removed daily shall be stored in areas specified by the Resident Engineer. Break up concrete slabs below grade that do not require removal from present location into pieces not exceeding 600 mm (24 inches) square to permit drainage. Contractor shall dispose debris in compliance with applicable federal, state or local permits, rules and/or regulations.

- D. Remove and legally dispose of all materials, other than earth to remain as part of project work, from any trash dumps shown. Materials removed shall // become property of contractor and shall be disposed of in compliance with applicable federal, state or local permits, rules and/or regulations // be hauled to VA specified disposal site //. All materials in the indicated trash dump areas, including above surrounding grade and extending to a depth of 1500mm (5feet) below surrounding grade, shall be included as part of the lump sum compensation for the work of this section. Materials that are located beneath the surface of the surrounding ground more than 1500 mm (5 feet), or materials that are discovered to be hazardous, shall be handled as unforeseen. The removal of hazardous material shall be referred to Hazardous Materials specifications.
- E. Remove existing utilities as indicated or uncovered by work and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Resident Engineer. When Utility lines are encountered that are not indicated on the drawings, the Resident Engineer shall be notified prior to further work in that area.

### **3.2 CLEAN-UP:**

On completion of work of this section and after removal of all debris, leave site in clean condition satisfactory to Resident Engineer.

## **ITEM NO. 1100- ELECTRICAL WORKS**

### **CONDUITS, BOXES & FITTINGS**

#### **DESCRIPTION**

This item shall consist of the furnishing and installation of the complete conduit work consisting of electrical conduits; conduit boxes such as junction boxes, pull boxes, utility boxes, octagonal and square boxes; conduit fittings such as couplings, locknuts and bushings and other electrical materials needed to complete the conduit roughing-in work of this project.

#### **MATERIAL REQUIREMENTS**

All materials shall be brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.

#### **CONDUITS**

**Standard PVC, EMT and RMC conduit pipe system is required for this project.**

Conduit runs shall be concealed in drop ceiling and or embedded in concrete structure where concealment is not possible.

No conduit of less than 15mm normal diameter shall be installed for this project (two or more conduits shall not be installed in lieu of a large size).

Conduit run shall be continuous from outlet and no running thread shall be in any conduit run. Conduit shall be cut square and properly reamed.

All joints shall be screwed enter knockouts of conduit boxes, pull boxes, panels and cabinet squarely. Lock-nuts shall be screwed tight to insure continuity of raceway grounding.

Bonds and offset shall be avoided where possible, but where necessary it shall be made with approved conduit bending apparatus.

Conduit which have been deformed or crushed in any manner should not be installed.

The Contractor shall plug with lead or closed with approved pipe caps the ends of all conduits which are to be left empty within the cabinets and conduit boxes so as to prevent the entrance of white ants and dirt within the conduit system.

This lead or cap shall be placed that can be easily removed when so desired and at the same serve the purpose intended.

Pill wire shall be inserted in the empty ducts before they are closed with lead or caps and shall be left therein for the future use.

When not shown on the plans, conduit sizes shall correspond to the conduit sizes on tables of the Philippine Electrical Code latest edition.

#### Conduit Boxes

All conduit boxes shall be code gauge steel and galvanized. Outlet boxes shall be galvanized pressed steel of standard make. In general, outlet boxes shall be at least 100 mm square or octagonal, 53 mm deep and 16 mm minimum gauge.

#### Conduit Fittings

All conduit fittings such as locknuts and bushing shall be galvanized of standard make.

#### General Specifications

The work to be done under this division of specifications consists of the fabrication, furnishing, delivery and installation; complete in all detailed of the electrical work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by other fields. All works shall be done in accordance with the rules and regulations and with the specifications

#### Specifications on:

- Lighting fixtures and lamp
- All lighting fixtures and lamp are as specified and listed on lighting fixture schedule.
- For fluorescent lamp, it shall be 40-watt rapid start cool-white. All fluorescent ballast shall be 230 volts, high power factor, of good quality materials and approved by the Bureau of Product Standard (BPS).
- Material Requirements
- All materials to be used shall conform to the BPS specification.

#### Construction Requirements

- All grounding system installation shall be executed in accordance with the approved plans.
- Grounding system shall include building perimeter ground wires, ground rods, clamps, connectors, ground walls and ground wire taps as shown in the approved design.

#### Auxiliary System

- All auxiliary system such as telephone and intercom system, time clock system, fire alarm system and public address/nurse's call/paging system installation shall be done in accordance with the approved design.
- All materials to be used shall conform to the Bureau of Philippine Standard (BPS) specifications.
- Important requirement regarding supervision of the work and submission of certificate of completion.
- All wiring installation herein shall be done under the direct supervision of a licensed Electrical Engineer at the expense of the Contractor. The contractor shall submit the certificate of completion duly approved by the University/PMO's representative.
- Test and guarantee
- Upon completion of the electrical construction work, the contractor shall provide all test equipment and personnel and to submit written copies of all test results.
- The contractor shall guarantee the electrical installation are done and in accordance with the approved plans but not mentioned in this specifications. The contractor shall guarantee that the electrical systems are free from all grounds and from all defective workmanship and materials and will remain so for a period of one year.

## SCOPE OF WORK

The work under this Electrical, consist of furnishing all materials, equipment, tools, labor and all other services necessary to complete and make ready for operation the Electrical Power and Lighting System described below and or indicated in the Electrical Plans in accordance with the latest edition of the Philippine Electrical Code and this Specifications and General Conditions of the Contract.

## CONSTRUCTION REQUIREMENTS

- Furnishing and installation of service entrance, conduits and conductors, and all items required by local utility power company’s policy, rules and regulations.
- Furnishing and installation of panel boards at location indicated on the plan and electrical riser layout, including all accessories required.
- Furnishing and installation of feeder and branch circuit conductors with the necessary conduits, approved type of fittings and devices as indicated in the electrical plans.
- Furnishing and installation of all types of utilization devices, outlets and wall switches with properly installed cover plate.
- Furnishing of all lighting fixtures, conduits, including service entrance duct, terminal cabinet and utility boxes.

## CODES, REGULATIONS AND STANDARDS

The installation and equipment shall conform to good ENGINEERING practices and in particular comply with the requirements laid down in the following documents or its equivalent which are mandatory and modified only by specific agreement.

- Philippine Electrical Code, Latest Edition ----- PEC**
- Underwriter’s Laboratory, Inc. ----- UL**
- National Electrical Manufacturer’s Association ----- NEMA**
- Local Utility Power Company (LEYECO II) ----- LUPC**

In addition to the requirements of these Codes and the Utility Power Company’s requirements. Bureau of Fire Protection (BFP), Tacloban City engineering office (CEO). Local government regulation and suppliers Specification if any, shall be followed.

## DRAWING AND SPECIFICATION

The Drawings and Specifications are meant to be complementary to each other, and what is called for by one shall be binding as if called for both. Any apparent conflict between the drawings and specifications, and any controversial or unclear points in either shall be preferred to the supervising Architect/Engineer for final interpretation and decisions. On one copy of the plans, have a record showing all deviations that happened during the construction.

Upon completion of work as described herein, the Contractor at his own expense shall furnish the University/PMO 6 copies of the “As Built” plan for future references and maintenance purposes.

## CORRELATION OF WORK

The Electrical Contractor shall confer with the General Contractor and Engineer to determine how and where his work fits with that of other crafts, after familiarizing himself with the plans and specifications.

This shall be done at the beginning of construction. Should there be any existing doubts at any point, ruling shall be secured from the supervising Architect/Engineer, who shall be given time to inspect the work covering this point and to prepare a detail in the form of drawings and written instructions as required.

## **PERMITS AND INSPECTION**

The Contractor shall obtain at his own expense, all the necessary permits and certificates of Electrical Inspection from the proper government authorities required for both the performance of his work involved and the proper operation of the system upon completion of the work.

The Contractor shall at his expense, reproduce the electrical plans for his work to the necessary scale and complete them with the information and requirements as required by the government authorities concerned in issuing and Certificate of Electrical Inspection.

## **EXAMINATIONS OF PREMISES**

Prospective bidder is required to examine the architectural, structural, and electrical plans of the project, to visit the site and carefully take note of all the conditions thereat to have personal informed under which the electrical work is to be done.

No allowance will subsequently be made in his behalf of any error on his part. He will be deemed to have done this before submitting his proposal and no subsequent claims on the ground of inadequate or inaccurate information will be entertained.

## **LAYOUT OF WORK**

- Electrical system layout indicated on the drawings is generally diagrammatic and the location of location of outlets, devices, apparatus and equipment are only approximate.
- The exact routing of conduits, location of outlets, devices, apparatus and equipment shall be governed by structural and architectural conditions and limitations.
- For the exact location, consult the supervising Architect/Engineer. This does not mean to permit redesigning of the systems. All outlets are to be interconnected as indicated in the drawings.
- The University/PMO reserves the right to make any reasonable change in location of outlet and equipment prior to rough-in, without involving additional expense.
- The Contractor shall be responsible and pay charges for cutting and patching for piping lines where sleeves or slots were not installed or where incorrectly located.

## **MATERIALS AND WORKMANSHIP**

All materials to be installed shall be unused, brand new and shall conform to the standards of the Underwriters Laboratories, Inc. in everywhere such as standard has been established for the particular type of materials to be used.

Only skilled workmen using proper tools and equipment shall be employed during the entire course of installation work.

All workmanship shall be of the best practices of the trade involved. The same job site during the entire course of the job.

## **SERVICE ENTRANCE**

The Electrical Contractor shall furnish and install 220 volts rating, (3) Phase line underground service entrance connection.

The service entrance conductors shall be thermoplastic type **THWN/THHN** standard copper conductors, stranded, whose number and size are indicated on the plans and electrical riser diagram.

## **SERVICE METERING FACILITIES**

It shall be the duty of the Contractor to request the local power company to install a proper type and size of service metering instruments and all other necessary accessories, materials, equipment, devices and fittings.

## PANELBOARDS

- The contractor shall furnish and install the necessary panel board multi-breaker type including the breakers as indicated in the drawings.
- Circuit breakers shall be tropical of the magnetic thermal type with ratings and number of poles as indicated in the drawings.
- All panel boards to be used shall be flush mounted when located in areas that are visible to the general public and may be surface mounted when located in machine room or areas where they are not visible to the public.
- All panel boards shall be set plumb and symmetrical with the surrounding objects. Panel boards shall be installed in a perfectly fit cabinet of appropriate size provided with a stop indoor trim and good quality cylinder lock.

## WIRING METHODS

- Wiring for all systems shall be type **THHN** conductors using plastic conduit pipes. Other types of conductor shall be as indicated in the drawings.
- Conduit shall be embedded in columns, walls and toppings of floors slabs to allow flush connections and lighting system which may be exposed between joints in case a drop ceiling is installed.
- Proper fittings shall be provided at ends of conduits. Wiring installations through wooden double partitions shall be in standard PVC conduits, and all cases, the wiring installation shall be concealed from view.
- All conduit and conduit fittings shall be PVC and shall conform to the U.S. Underwriters Laboratories Inc. Standard and Codes.
- The minimum size of conduit to be used shall be 13mm diameter. Sizes larger than 13mm diameter shall be indicated in the drawings.
- Smallest size of conductor to be used shall be 2.0mm<sup>2</sup>, type THW. THW wire shall be indicated in the drawings.
- ***Circuit homeruns for lighting shall be 3.5mm<sup>2</sup> and 5.5mm<sup>2</sup> for the power or otherwise indicated on the plans.***
- All splice, tape and junctions for all systems using conductors up to 14mm<sup>2</sup> shall be accomplished by using electrical friction or rubber types.
- Proper type of connections shall be employed to accommodate all splices and solder less type terminals to be used for connection to Bus bar.
- Taps and splices shall be properly protected with both plastic and friction electrical tapes to proper insulation and protection for 600 volts.
- Wiring from ceiling outlets to lighting fixtures recessed in dropped ceilings shall be done using type THW conductors in RS or PVC conduits.
- Proper size of boxes shall be used for switch and outlet receptacles.
- Necessary fittings such as bushing, locknuts and anti-short fiber bushing shall be used at proper places so required.
- When not shown on the Plans, conduit sizes shall correspond to the conduit sizes as prescribed in the Philippines Electrical Code table for "Size of Conduit Pipes".

## OUTLETS AND SWITCHES

- All boxes for outlets and switches shall be PVC approved products of reputable manufacturers.
- All ceiling outlet boxes intended for lighting outlets shall be of the 10cm octagonal box. Larger boxes when required shall be 5.3cm deep.
- Convenience and wall switch outlet boxes shall be of the 10cm. by 5.3cm. rectangular deep flush type or 100 square cm junction box with gang raised cover as required to accommodate the wires therein.
- All junction boxes, pull boxes and blank boxes shall be fitted with standard flat metal or plastic box cover.

- All boxes including junction and pull boxes shall be of sufficient size to provide free space for all conductors enclosed in the box, in addition to the fittings such as switch mechanism and receptacles that may be placed therein.

### **WALL SWITCHES AND RECEPTACLES**

- Suitable single pole, two-gang and three-way switches of the flush tumbler type and receptacles with proper Bakelite cover plates shall be furnished and installed as indicated in the drawings.
- Wall switches intended to control lights on the 230 volts system shall be rated 15 amp.250 volts.
- Convenience outlets shall be flushed duplex type rated 20 amperes 230 volts 60Hz., AC.
- Acceptable Brands: *National or Panasonic.*

### **GROUNDING INSTALLATION**

- The contractor shall furnish and install **all ground cables**, connection **ground rods** and all other materials required to provide a permanent effective grounding system.
- Grounding, in general, shall conform to the provisions of the Philippine Electrical Code and as recommended by the equipment manufacturer.
- All enclosure for electrical equipment regardless of voltage shall be grounded, including metal frames of switchboard, motors, generators and steel poles. Each shall be grounded in separate grounding system.
- **Grounding cables shall be bare TW (color green)**, cooper of suitable size and of the approved type. Ground rods shall be copper clad steel with diameter of 16mm and length of 2.0m.
- Ground clamps shall be of high copper alloy bronze with minimum thickness of 4.7mm hardware made from silicon bronze.
- The clamps shall be of a shape and size to fit the points of application and type of connection to be made from cable rod, pipe and curved or flat surfaces. Connections shall be suitable for direct burial without danger or corrosion.

### **LIGHTING OUTLETS**

All ceiling outlets shall be 10cm. x 5cm. octagonal boxes. Connection from fixtures to boxes shall be accomplished by using type TW on a flexible conduit.

### **LIGHTING FIXTURES**

All lighting fixtures shall be furnished and installation by the contractor. They shall be as shown on the drawings or specified on the schedule of lighting fixtures. For other details as to the type and model, **consult the Architect/Engineer.**

### **TEST AND GUARANTEE**

- The Contractor shall furnish all apparatus to be in making various electrical tests of all wiring system (for shorts and grounds) after the electrical work are completed.
- The Contractor guarantees all work installed under the Contractor to be free from all defects for a period of one-year acceptance of the works.
- The Contractor also agree to repair and make good at his own expense any and all defects which may develop in his work during the time if said defects arise due to poor workmanship.

### **POWER LOAD CENTER**

This item shall consist of furnishing and installation of the light/ power panel board and distribution panel boards at the location shown on the plans complete with circuit breakers, cabinets and all accessories, completely wired and ready for service.

a. **Material Requirements**

All items shall be brand new and shall be of the approved type. It shall conform to the requirements of the Philippine Electrical Code and shall bare the Philippine Standard Agency (PSA) mark.

b. **Circuit Breaker (Molded Case) – MCCB**

The low voltage switchboard shall be standard modular unitized units, metal built, dead front, safety type construction and shall consist of the following.

1. **Main Circuit Breaker** – the main circuit breaker shall be draw-out type, manually or electrically operated as required with ratings and capacity as shown on the plans.
2. **Feeder Circuit Breakers** – there shall be as many feeder breakers as are shown on the single line diagram or schematic riser diagram and schedule of loads and computations on the plans.

- The circuit shall be draw out or molded case required. The circuit breakers shall each have sufficient interrupting capacity and shall be manually operated complete with trip devices and all necessary accessories to ensure safe and sufficient operation.
- The number, ratings, capacities of the feeder branch circuit breakers shall be as shown on the approved plan.
- Circuit breakers shall each be of the indicating type, providing “ON” and “OFF” and “TRIP” position of the operating handles and shall each be provided with nameplate for branch circuit designation.
- Circuit breaker shall be so designed that an overload or short on one pole automatically causes all poles to open.

3. **Grounding System** – all non-current carrying metallic parts like conduits, cabinets and equipment frames shall be properly grounded in accordance with the Philippine Electrical Code, latest edition. The size of the ground rods and ground wires shall be as shown on the approved plan. *The ground resistance shall not be more than 5 Ohms.*

4. **Panel Board and Cabinets** – shall conform to the schedule of panel boards as shown on the approved plan with respect to supply characteristics, rating of main lugs or main circuit breaker, number and ratings and capacities of branch circuit breakers.

- Panel board shall consist of a factory completed dead front assembly amounted in an enclosing flush type cabinet consisting of code gauge galvanized sheet steel box with trim and door.
- Each door shall be provided with catch lock and two (2) keys.
- Panel board shall be provided with directories and shall be printed to indicate load served by each circuit.
- Panel board cabinets and trim shall be suitable for the type of mounting shown on the approved plan. The inside and outside of panel board cabinets and trims shall be factory painted with one rust proofing primer coat and two finish coats of pearl gray enamel paint.
- The main and branch circuit breakers for panel boards shall have the rating, capacity and number of poles as shown on the approved plan.
- Breaker shall be thermal magnetic type. Multiple breakers shall be of the common trip type having a single operating handle.
- For 50- ampere breaker or less, it may consist of a single pole breaker permanently assembled at the factory into a multi-pole unit.

(See Approved Electrical Drawing)

**SPECIAL ITEM – COMMON BORROW**

**DESCRIPTION**

This item shall consist of the excavation and placing of suitable material obtained from locations outside the right-of-way. Excavation of roadways, roadway ditches and slopes thereof, in

accordance with the typical drawings and/or as noted in the Special Provisions, either inside or outside of the right-of-way, will not be classified as Borrow Excavation. When the Consultant directs that a roadway excavation be widened from that shown on the typical drawings or as noted in the Special Provisions, for the purpose of obtaining additional material, the material excavated outside the right-of-way will be classified as Common Excavation.

## **BORROW PLACEMENT**

- Place roadway excavation or borrow or both in the embankment section with the highest quality material in the top portion of the embankment.
- Scarify and compact the top 8 inches of the surface of the working platform or foundation to at least 90 percent of maximum laboratory density when the embankment height is 6 ft or less.
- Break and scarify all underlying concrete pavement surfaces so that pieces do not exceed 1 ft<sup>2</sup> before placing embankment over an existing concrete pavement surface that is outside the limits of removal or excavation shown.
  1. Remove other pavement surfaces that are not Portland Cement Concrete
- Maintain Drainage
  1. Grade and maintain the roadway to ensure adequate drainage.
  2. Maintain drainage pipes and drainage ditches or provide temporary facilities when interrupting items such as irrigation systems, sewers, and under-drains.
- Place an initial layer to act as a working platform over soft, wet ground when approved by the Engineer.
  1. Density requirements do not apply to the working platform.
  2. Meet density requirements for embankment placed above the working platform.
- Do not place initial layer of embankment until Engineer inspects and accepts the working platform or foundation.
- Spread embankment materials uniformly in layers not exceeding 1 ft (uncompacted depth) and compact to the density requirements.
  1. Reduce the lift thickness or modify operations if tests show unsatisfactory density.
- Finish subgrade surface within  $\pm 0.2$  ft of line and grade.
- Do not use rock or broken concrete materials over 1 ft in any dimension.
- Distribute larger particles so space exists for placing and compacting embankment material.
- Do not place rocks larger than 4 inches or broken concrete within 1 ft of the subgrade surface.
- Do not use compacting equipment that causes shear failure in the embankment.

## **ITEM NO. 1202 (6) FIRE EXTINGUISHER W/ CABINET**

### **DESCRIPTION**

This item shall consist of tools and equipment including labor required in undertaking the proper installation of fire extinguisher with cabinet as shown on the Plans and in accordance with this Specification.

The specified material to be used as an equipment of the project:

- fire rating 34 a 233 b c
- extinguishing agent epw 18462 (abc favorit tertia) abc powder - map 20 %
- propellant dehumidified air or n<sub>2</sub> ,15 bar at 20°C
- temperature range -30°C / +60°C
- nominal charge 6 kg
- full weight ~ 9,4 kg
- dimensions height 550 mm diameter 160 mm
- discharge time 16,5 sec.
- valve tightening torque minimum 40 nm, maximum 60 nm
- cylinder pressure test pt 27 bar
- cylinder volume 7,8 l.
- safety valve set between 22 and 27 bar

- cylinder material alloy steel
- external/internal treatment sandblast and epoxy polyester powder painting, red ral 3000 colour.

## **INSTALLATION**

- No extinguisher should be mounted higher than 1200mm (120cm) off the floor. The bottom of the extinguisher should be no less than 100mm (10cm) from the floor.
- To prevent fire extinguishers from being moved or damaged, they should be mounted on brackets or in wall cabinets with the carrying handle placed 3-1/2 to 5 feet above the floor. Larger fire extinguishers need to be mounted at lower heights with the carrying handle about 3 feet from the floor.

Note: **(All materials to be used must be inspected and approved by the architect in charge of records prior to installation)**

## **SPECIAL ITEM- ELECTRONIC WORKS**

### **DESCRIPTION**

This item shall consist of materials and equipment including labor required in undertaking the proper installation of electronic system as shown on the Plans and in accordance with this Specification.

### **EQUIPMENT AND MATERIALS**

- Provide products and materials that are new, clean, free of defects, and free of damage and corrosion.
- Products and materials shall not contain asbestos or any other material which is installed considered hazardous by the authority having jurisdiction.
- Replace materials of less than specified quality and relocate work incorrectly installed as directed by the Project Manager.
- Provide name/data plates on major components of equipment with manufacturer's name. Model number, serial number, capacity data and electrical or electronics characteristics attached in a conspicuous place.
- Install materials and equipment with qualified trades people.
- Maintain uniformity of manufacturer for equipment used in similar application and sizes.
- Follow manufacturer's instructions for installing, connecting, and adjusting equipment. Provide a copy of such instructions at the equipment during installation.
- Where factory testing of equipment is required to ascertain performance, and attendance by the university's representative is required to witness such tests, associated travel costs and subsistence shall be paid for by the Contractor.
- Equipment capacities, ratings, etc., are scheduled or specified for job site operating conditions. Equipment sensitive to altitude shall be derated with the method of derating identified on the submittals.
- Enclosures for Electrical and Electronic equipment installed in mechanical equipment rooms shall be NEMA type 1 gasketed. Enclosures for electrical and electronics equipment installed outdoors shall be NEMA type 4 or greater required.

Prepared by:

**(SGD) AR. BERNIE G. TUDIO, UAP**  
Planning Officer III

## *Section VII. Drawings*



## *Section VIII. Bill of Quantities*



**IB-2024-07-15 RENOVATION OF THE EVSU-SLS AUDIO VISUAL HALL, OLD LIBRARY FUNCTION ROOM, ENGINEERING BUILDING ROOM 301, 302, 303, AND 304 AS EVSU SMART CAMPUS E-LEARNING CENTERS**

**BILL OF QUANTITIES**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
(1)	(2)	(3)	(4)
<b>I.</b>	<b>EVSU Old Library Bldg. Function Room</b>		
903(2)	Formworks and Falseworks	1.00	ls
803 (1) a,b,c	Structure Excavation	125.00	cu.m.
900 (1)	Structural Concrete	22.06	cu.m.
902 (1)a	Reinforcing Steel (Deformed)	820.00	kgs.
804(4)	Gravel Fill	6.00	cub.m.
1003 (1) a1 &	Carpentry & Joinery Works	290.00	sq.m.
1004	Hardware	1.00	ls
1007 (1) b	Aluminum Framed Glass Door	6.30	sq.m.
1008 (1) c	Aluminum Framed Glass Window	9.60	sq.m.
1010 (1)	Wooden Frames	1.00	set
1010 (2) a	Wooden Door	2.10	sq.m.
1018	Ceramic Tiles	95.00	sq.m.
1019 (1) c	Wooden Tiles	21.76	sq.m.
1032	Painting, Varnishing, & Other Related	180.10	sq.m.
1046 (2) a1	Masonry Works	7.60	sq.m.
1053 (1) a	Carpet Tiles	217.57	sq.m.
SPECIAL ITEM	Wood Plastic Composite (WPC) Panel	40.38	sq.m.
SPECIAL ITEM	Decorative PVC Wall Panel	22.54	sq.m.
B.7	Occupational Safety and Health	5.50	mo
1105	Demolition Works	110.20	sq.m.
1100	Electrical Works	1.00	ls
SPECIAL ITEM	Common Borrow	3.00	cu.m.
1202(6)	Fire Extinguisher w/ Cabinet	4.00	set
<b>II.</b>	<b>EVSU SLS Audio-Visual Hall</b>		
903(2)	Formworks and Falseworks	1.00	ls
803 (1) a,b,c	Structure Excavation	2.00	cu.m.
900 (1)	Structural Concrete	10.00	cu.m.
902 (1)a	Reinforcing Steel (Deformed)	438.00	kgs.
804(4)	Gravel Fill	2.00	cub.m.
1003 (1) a1 &	Carpentry & Joinery Works	88.40	sq.m.
1004	Hardware	1.00	ls
1007 (1) b	Aluminum Framed Glass Door	4.20	sq.m.
1008 (1) c	Aluminum Framed Glass Window	16.74	sq.m.
1019 (1) c	Wooden Tiles	20.00	sq.m.
1027 (3)	Decorative Stone	11.52	sq.m.
1032	Painting, Varnishing, & Other Related	38.21	sq.m.
1046 (2) a1	Masonry Works	45.00	sq.m.
1053 (1) a	Carpet Tiles	117.91	sq.m.
SPECIAL ITEM	Wood Plastic Composite (WPC) Panel	37.00	sq.m.
SPECIAL ITEM	Decorative PVC Wall Panel	22.00	sq.m.
B.7	Occupational Safety and Health	5.50	mo
1105	Demolition Works	90.00	sq.m.
1100	Electrical Works	1.00	ls
SPECIAL ITEM	Common Borrow	3.00	cu.m.
1202(6)	Fire Extinguisher w/ Cabinet	1.00	set



III.	EVSU Engineering Bldg. Rm. 301, 302, 303, & 304		
903(2)	Formworks and Falseworks	1.00	Is
1003 (1) a1 &	Carpentry & Joinery Works	128.00	sq.m.
1007 (1) b	Aluminum Framed Glass Door	8.40	sq.m.
1032	Painting, Varnishing, & Other Related	259.02	sq.m.
1046 (2) a1	Masonry Works	24.80	sq.m.
SPECIAL ITEM	Wood Plastic Composite (WPC) Panel	80.76	sq.m.
B.7	Occupational Safety and Health	5.50	mo
1100	Electrical Works	1.00	Is
SPECIAL ITEM	Accordion Wall	1.00	Is
1200 (13) a	Airconditioning	1.00	Is
IV.	Estimated Government Expenses (.5% of Appropriation)		

Prepared by:

**PHYSICAL PLANT AND INFRASTRUCTURE DEVELOPMENT OFFICE (PPIDO)**



## ***Section IX. Checklist of Technical and Financial Documents***



# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

### *Class "A" Documents*

#### Legal Documents

- (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

#### Technical Documents

- (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**
- (d) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**
- (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**
- (f) Project Requirements, which shall include the following:
- a. Organizational chart for the contract to be bid;
  - b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
  - c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- (g) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

#### Financial Documents

- (h) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).



***Class “B” Documents***

- (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence **or** duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

**II. FINANCIAL COMPONENT ENVELOPE**

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

***Other documentary requirements under RA No. 9184***

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



## *Section X. Bidding Forms*



**ANNEX A**

**STATEMENT OF BIDDER’S ONGOING GOVERNMENT & PRIVATE CONTRACTS INCLUDING  
CONTRACTS AWARDED BUT NOT YET STARTED**

*[shall be submitted with the Bid]*

Business Name:  
Business Address:

Name of Contract	Date of the Contract	a) Owner’s Name b) Address c) Telephone No.	Nature of Work	Contractor’s Role (Whether sole contractor, subcontractor, or partner in a JV) and percentage of participation		Contract Duration	Total Contract Value at Award	Date of completion/ Estimated completion time	a. Total contract value at completion b. % of planned and actual accomplishments c. Value of outstanding works
				Description	%				
<b><u>Government</u></b>									
<b><u>Private</u></b>									

- Note: This statement shall be supported with:**
1. Notice of Award and Contract (Government and Private Contracts)
  2. Sales Invoices (Private Contracts)

Submitted by : \_\_\_\_\_  
*(Printed Name and Signature)*

Designation : \_\_\_\_\_

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

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



**ANNEX B**

**STATEMENT OF BIDDER’S SINGLE LARGEST COMPLETED CONTRACT**

*[shall be submitted with the Bid]*

Business Name:

Business Address:

Name of Contract	Date of the Contract	a) Owner’s Name b)Address c) Telephone No.	Nature of Work	Contractor’s Role (Whether sole contractor, subcontractor, or partner in a JV) and percentage of participation		Contract Duration	Total Contract Value at Award	Date of completion	a. Total contract value at completion b. % of planned and actual accomplishments
				Description	%				

*\*Statement of Single Largest Completed which is similar in nature for the past two (2) years*

**Note: This statement shall be supported with:**

1. Notice of Award and Contract (Government and Private Contracts)
2. Sales Invoices (Private Contracts)
3. Project Owner’s Certificate of Final Acceptance issued by the Owner other than the Contractor or Constructors Performance Evaluation System (CPES) Final Rating which must be at least satisfactory. In case of contracts with the private sector, an equivalent document shall be submitted.

Submitted by : \_\_\_\_\_  
(Printed Name and Signature)

Designation : \_\_\_\_\_

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

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



**ANNEX C**

**Bid Securing Declaration Form**

*[shall be submitted with the Bid if bidder opts to provide this form of bid security]*

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

**BID SECURING DECLARATION**  
**Project Identification No.: *[Insert number]***

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
  - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
  - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
  - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this \_\_\_\_ day of *[month]* *[year]* at *[place of execution]*.

*[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*



**ANNEX D**

**Omnibus Sworn Statement (Revised)**

*[shall be submitted with the Bid]*

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 or authorized representative 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, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

*[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 to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary’s Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

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, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

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:]* The owner or sole proprietor is not related to the Head of the Procuring Entity, Procurement Agent if engaged, 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, Procurement Agent if engaged, 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, Procurement Agent if engaged, 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 responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
  - a. Carefully examining all of the Bidding Documents;
  - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
  - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, 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.
10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

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

*[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*



**ANNEX E**

FORMAT OF JOINT VENTURE AGREEMENT (JVA)

KNOW ALL MEN BY THESE PRESENTS:

That this JOINT VENTURE AGREEMENT is entered into by and between:

(Name of Company), a corporation duly organized and registered under Philippine law, with principal office address at (address), and represented herein by (Position), (Name)

-and-

(Name of Company), a corporation duly organized and registered under Philippine law, with principal office address at (address), and represented herein by (Position), (Name)

That the above parties are duly authorized by their respective corporations to enter into and bind their respective corporations to a Joint Venture Agreement, pursuant to a valid Board Resolution issued by their respective Board of Directors/Trustees.

That all parties agree to join together their manpower, equipment, and what is needed to establish a project-specific Joint Venture for the purpose of bidding, and if successful, undertaking of the hereunder stated project of the NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY (NEDA).

NAME OF PROJECT	ABC

That both parties agree to be jointly and severally liable for the entire assignment.

That both parties agree that (Name of Company) shall act as the lead organization and (Name of Company) as partner organization; and (Name of Company), as the lead organization, will oversee the administration and content of the eligibility and proposal submissions, coordinate with NEDA on any matter that needs attending to, and implement the project in the event that the joint venture wins the bid.

That both parties agree that (Name), (Position), of (Name of Company), shall be the Official Representative of the Joint Venture, and is granted full power and authority to do, to execute, and perform any and all acts necessary, and/or to represent the Joint Venture in the entire bidding and implementation process, as fully and effectively as the Joint Venture may do so as if personally present, without prejudice to the authority of the Joint Venture partners to exercise their power of substitution and revocation.

That this Joint Venture Agreement shall remain in effect only for the above stated Project until terminated by both parties or in the event of an unsuccessful bidding.



In witness thereof, we have hereunto affixed our signatures this \_\_\_\_\_ day of \_\_\_\_\_ 2024 at \_\_\_\_\_.

(Name of Company)

by:

(Name) (Position)

(Name of Company)

by:

(Name) (Position)

WITNESSES:

(Signature of Witness)

(Name of Witness)

Address:

(Signature of Witness)

(Name of Witness)

Address

ACKNOWLEDGEMENT

BEFORE ME, a Notary Public for and in the (City/Province/Municipality) of \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 2021, personally appeared:

NAME	ID PRESENTED/ EXPIRATION	PLACE OF ISSUE

known to me and to me known to be the same persons who executed the foregoing instrument which they acknowledged to me to be their free and voluntary act and deed, consisting of page/s, including this page in which this Acknowledgement is written, duly signed by them and their instrumental witnesses on each and every page hereof.

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

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

Book No. \_\_\_\_\_

Series of \_\_\_\_\_.



## ANNEX F

### **Bid Form for the Procurement of Infrastructure Projects**

*[shall be submitted with the Bid]*

---

#### **BID FORM**

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

Project Identification No.: \_\_\_\_\_

To: *[name and address of Procuring Entity]*

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract]*;
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;
- d. The discounts offered and the methodology for their application are: *[insert information]*;
- e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. 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, or a Performance Securing Declaration in lieu of the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines<sup>1</sup> for this purpose;
- h. 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;
- i. 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

---

<sup>1</sup> currently based on GPPB Resolution No. 09-2020



- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the *[Name of Project]* of the *[Name of the Procuring Entity]*.
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

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

Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

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

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

